

## THE 2011 TO 2016 EXCAVATION CAMPAIGNS AT SITE PQ 2, SAGALASSOS. Dissecting a suburban club house (*schola*)

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### Abstract

*Immediately northeast of Sagalassos lies its Eastern Suburbium (formerly known as the Potters' Quarter), which has been the subject of research since 1987. Since 2011, the Sagalassos Archaeological Research Project intensified its efforts within this suburban quarter in the context of several research projects. One of its foci was the site PQ 2, located at the intersection of the Roman imperial era Potters' Quarter and a zone with more monumental buildings. The field work at this site could be finalised during the 2016 summer campaign, after previous campaigns executed in the period 2011-2014.*

*The excavations revealed a hall-like building, measuring c. 12.5 m by 10.7 m, erected around the middle of the 1<sup>st</sup> century AD. Its main feature was a water fountain against the centre of the back wall, opposing the main northern entrance and few other indications regarding its original purpose. The building was subsequently extended towards the south and subdivided into rooms around the turn of the century. The second-third century AD dumps of fauna and crockery outside the building bear testimony to regular communal dining practices, consisting of mainly simple meals in the style of a soup-kitchen. The almost complete remains of one final dining event could be documented inside the building, which was abandoned immediately afterwards.*

*Based on its suburban location, its architectural characteristics and the well-preserved find assemblages, an identification as an association hall or club house is proposed. These scholae and their associated activities are well known from ancient written sources, but there is far less archaeological data available, especially for the eastern part of the empire.*

### INTRODUCTION

Suburban developments of ancient cities have until recently been noticeably under-exposed, especially in the eastern Mediterranean area. The recent study edited by Pascal Darcque, Roland Étienne and Anne-Marie Guimier-Sorbets (Darcque *et al.* 2014) might prove to

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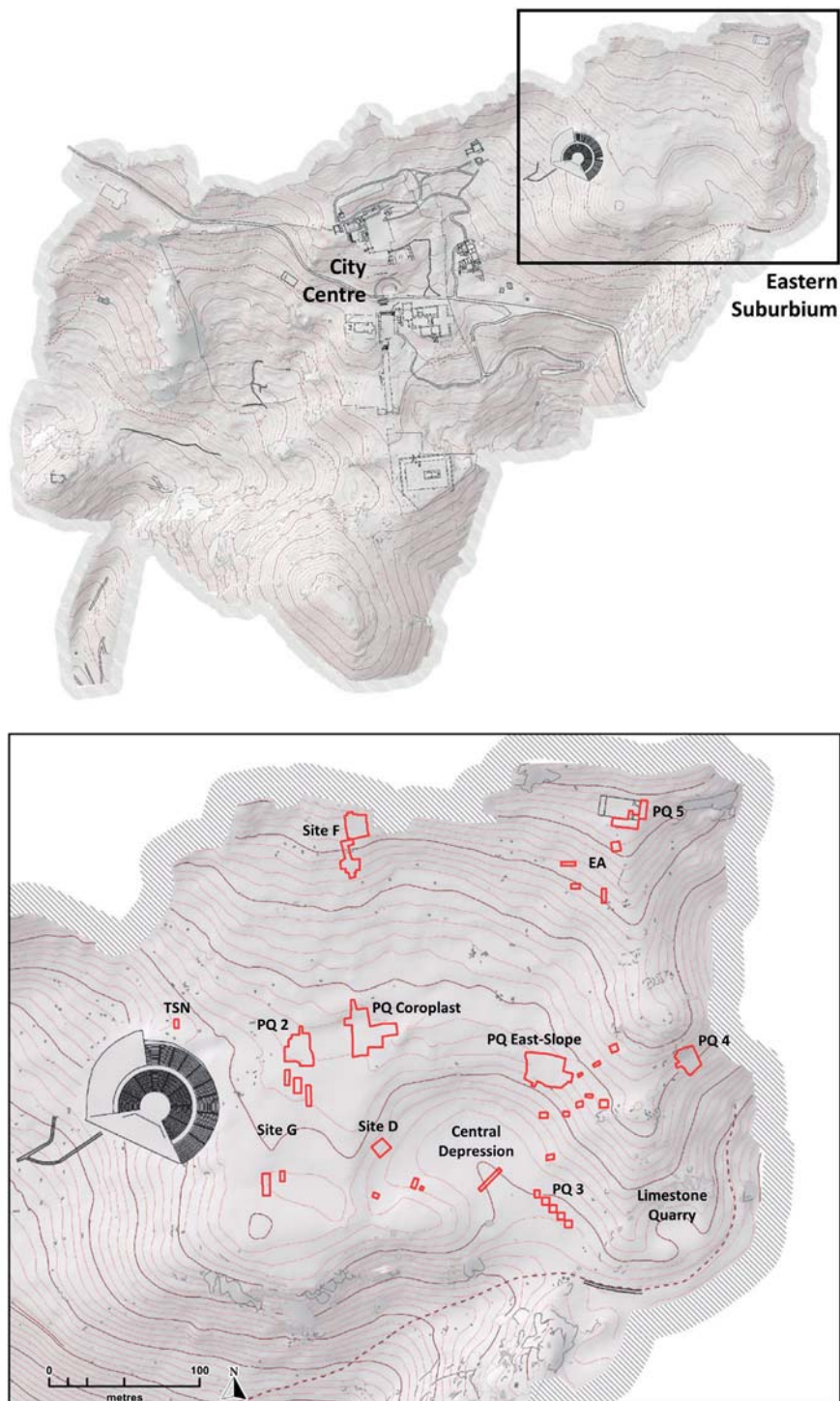


Fig. 1. The Eastern Suburbium of Sagalassos, with indication of excavated trenches.

be a turning point, as it offers a series of contributions on the phenomenon of *proasteia* (the ancient Greek term for suburban developments). Sagalassos, an archaeological site in Anatolian Pisidia, features a suburban quarter that has been the subject of research for over 25 years. The Sagalassos Archaeological Research Project, considering that the disclosure of this quarter could significantly contribute to our understanding of these phenomena, instigated a research programme on the topic in 2011. Over the last quarter of a century, the project had gathered data on the artisanal and funerary aspects of this suburban quarter to the northeast of the city centre (Fig. 1). The groundwork for the research programme consisted of assembling and interpreting the already available information as well as producing new data on specific open questions, applying a variety of scientific techniques (open area excavations, control excavations, core drillings, field survey, geophysical survey, aerial photography, tomography and geochemical sampling).

In 2011, a new open area excavation was opened at site PQ 2, located halfway between the theatre and the site of the so-called *coroplast* workshops (Murphy and Poblome 2016) (Figs. 2-3). The excavations were brought to completion during the 2016 summer campaign, following previous campaigns in the period 2011-2014. Prior geophysical research had revealed the presence of a rectangular building in this western part of the Eastern Suburbium, as well as several large structures and complexes to the west, south and southeast. Additionally, the excavations at the site revealed a contemporary, yet unidentified small ashlar monument (an altar, podium or tomb?), partially uncovered to the west of the main building. The site was situated at a bifurcation of the main thoroughfare into the Eastern Suburbium coming from the city centre, with an eastern arm extending deeper into the actual Potters' Quarter and a southern arm connecting with the main road leading towards the valleys to the east and south. The site sat at the transition between two major functional zones: the Potters' Quarter – forming the heart of the *suburbium* – and a more monumental quarter to the southwest. While there does not appear to have been a strict spatial division between the different suburban functionalities, the competition of practical needs and opportunities prompted a degree of clustering. The same logic underscored the development of the eastern *necropolis* of Sagalassos on the surrounding slopes (Köse 2005, 20-21 and *passim*), less accessible but overlooking some of the major thoroughfares.

The geophysical survey results (Martens *et al.* 2012) suggested that there were no artisanal kilns present in or around the PQ 2 building, while the wider surroundings east and north are riddled with them. The absence of kilns, the location and dimensions of the building and its presumed regular layout were the incentives to open this specific site, as part of the research programme aimed at documenting other than funerary and artisanal activities within the Eastern Suburbium. The working hypothesis was that the site represented a *schola* or club house, i.e. a central location for activities organised by an association. Such associations formed a backbone of ancient social life and could be based on religious, ethnic, professional or social links between its members (Fröhlich and Hamon 2013). Roman club houses and their associated activities are well known from ancient written sources, but there is far less archaeological data available (Bollmann 1998), especially for the eastern part of the Empire. In the vast majority of cases where *scholae* could be positively identified in the field, the evidence was provided by epigraphy or iconography. Although no such proof could be encountered at site PQ 2 at Sagalassos,

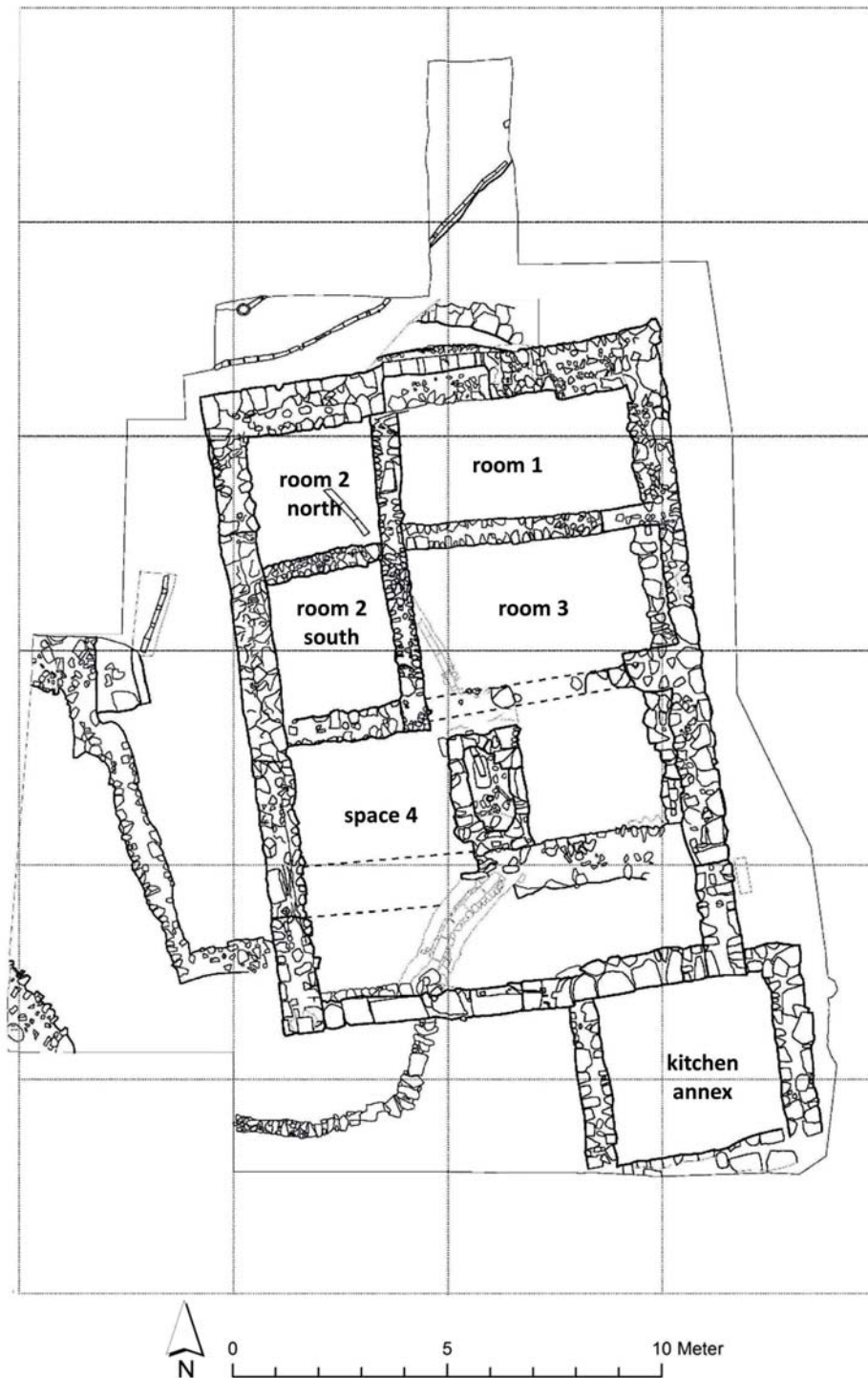


Fig. 2. General plan of the PQ 2 site at the end of the 2016 excavation campaign, with indication of the main spaces mentioned in the text.



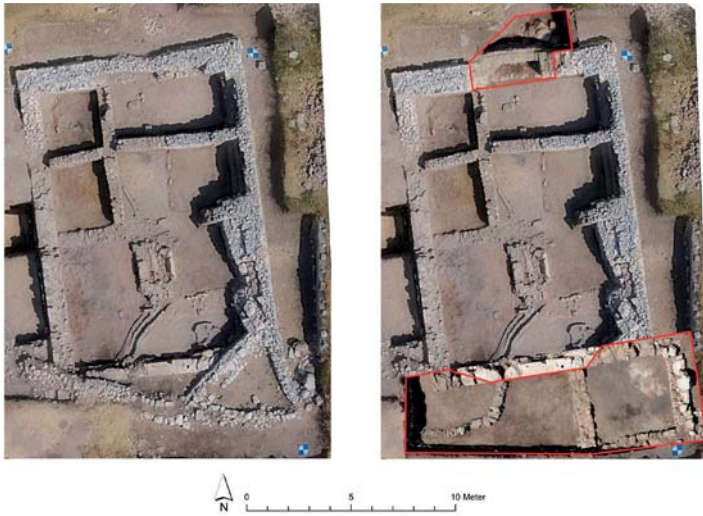


Fig. 3. Composite orthophotos of site PQ 2, before (left) and after (right) the 2016 excavation campaign, with the 2016 trenches outlined in red.

a thorough study of the remains and finds resulted in our proposing its identification as a *schola*.

Through careful examination of the architectural remains, the archaeological data and their stratigraphical interactions, it was possible to reconstruct the relative sequence of the different building phases of the site in some detail. Several of these phases were too closely related to distinguish them in the ceramic and/or stratigraphical record, but could still be proposed as

individual phases because of practical implications. However, it cannot be excluded that these constituted one sequence of events.

The following paragraphs will present the developments at the PQ 2 site in a relative chronological order (Fig. 4):

- **Phase 1:** the site prior to construction of the building (before *c.* 50 AD).
- **Phase 2:** the original building layout (*c.* 50 AD).
- **Phase 3:** first period of use (*c.* 50-100 AD).
- **Phase 4:** alternation phase (around *c.* 100 AD):
  - **4A:** extension of the building towards the south; construction of a new southern wall.
  - **4B:** the construction of an east-west wall dividing the building into two halves.
  - **4C:** construction of a north-south wall within the building, dividing the northern half into a western (room 2) and eastern section (rooms 1/3).
  - **4D:** construction of an east-west wall dividing room 1 from room 3.
- **Phase 5:** use of the building as a 'soup kitchen' (*c.* 100-250 AD)
- **Phase 6:** construction of a kitchen annex (*c.* 200 AD).
- **Phase 7:** final banquet and end of the building as a (semi-)public space (*c.* 275 AD).
- **Phase 8:** post-abandonment phase:
  - **8A:** partial dismantling of the building; improvised working arrangements (4<sup>th</sup> century AD).
  - **8B:** complete abandonment of the premises; site covered by pottery dumps (5<sup>th</sup>-6<sup>th</sup> centuries AD).
  - **8C:** abandonment of the Eastern Suburbium; quarter covered by erosional layers (from 7<sup>th</sup> century AD onwards).

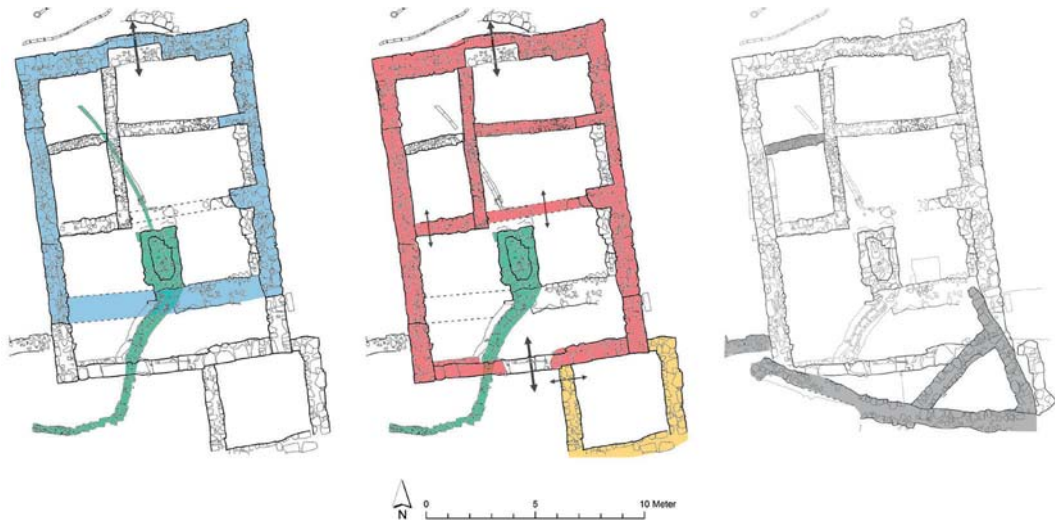


Fig. 4. Major changes in the layout of the PQ 2 site. Left: original layout (blue) from c. 50 AD (phase 2), with one single entrance from the north and the water infrastructure (green) against the back wall. Middle: layout after c. 100 AD (phase 4), with an extended building subdivided into separate rooms (red), multiple entrances and a later (phase 6) added kitchen annex (yellow).

Right: post-abandonment layout (phase 8), with the subdivision of room 2 and the later construction of field walls across and above the remains of the ruined building (grey).

#### PHASE I: PRIOR TO THE CONSTRUCTION OF THE BUILDING

The 2014 control excavation to the west of the building showed that at least the western part of the construction was bedded into a natural, N-S oriented gully, partially filled with stratified layers of tephra (Fig. 5). These weathered volcanic material layers most likely resulted from the erosion of older volcanic depositions uphill. Although this at least partially backfilled gully was probably no longer a prominent feature in the landscape at the time of the erection of the building, it cannot be excluded that it was still (seasonally) water bearing. Nowadays, this gully is still faintly visible as a slight depression in the landscape.

A 2016 control excavation along the northern wall provided more information on the layout of this area before the construction of the *schola*. An WNW-ESE oriented terrace wall was partially dismantled in order to make way for the new building and for the subsequent changes that this meant for its immediate surroundings, including the laying out of a new street. While the terrace wall followed more or less the local contour lines, the new street clearly did not, as it sloped down towards the southwest bending around the new *schola*. This terrace wall was constructed of large limestone rubble and a few *spolia* (fragments of a presumed threshold and ashlar could be recognised), without the use of a binding agent. As is the case for retaining walls, the terrace wall only had one face (south), while its back side was intended to grip into the partially dug-out natural substrata. The backfill consisted of limestone rubble and grey soil, clearly distinguishable from the very compact ochre-coloured virgin soil.

The fill behind the wall contained pottery sherds datable to the period 25 BC-25 AD. The original building at site PQ 2, dating to the middle of the first century AD, was thus constructed relatively shortly afterwards. However, it is not certain if this thorough dismantling of the terrace wall dates back to the construction of the *schola*. The almost vertically deposited layers immediately above the terrace wall (Fig. 6) contained finds dating to respectively 75-150 AD and 175-250 AD, thus bearing testimony to later interventions (see further). In the latter case, the 175-250 AD deposit was mixed with finds dating to late Hellenistic and early Roman imperial times, providing a strong indication that deposits linked with the construction of the terrace wall and/or the construction of the original PQ 2 *schola* were mixed at this later stage. It can thus

not be excluded that the terrace wall was further dismantled at later stages, especially since there does not seem to be a necessity for this operation during the time of the *schola*'s construction.

There is little information available on the use of the area prior to the construction of the *schola*. There are no indications for previous structures in the immediate surroundings, apart from the abovementioned terrace wall. Terrace walls dating back to Hellenistic and possibly late Achaemenid times have been documented throughout the Eastern Suburbium, and it is likely that the thus created level terrain was originally intended for agriculture and horticulture. From middle Hellenistic times onwards the terraces along the higher slopes of the Eastern Suburbium were gradually occupied with burials, while the further development of the central parts of the *suburbium* only started with the relocation of the Potters' Quarter in Augustan times (Poblome 2016; Claeys 2016).

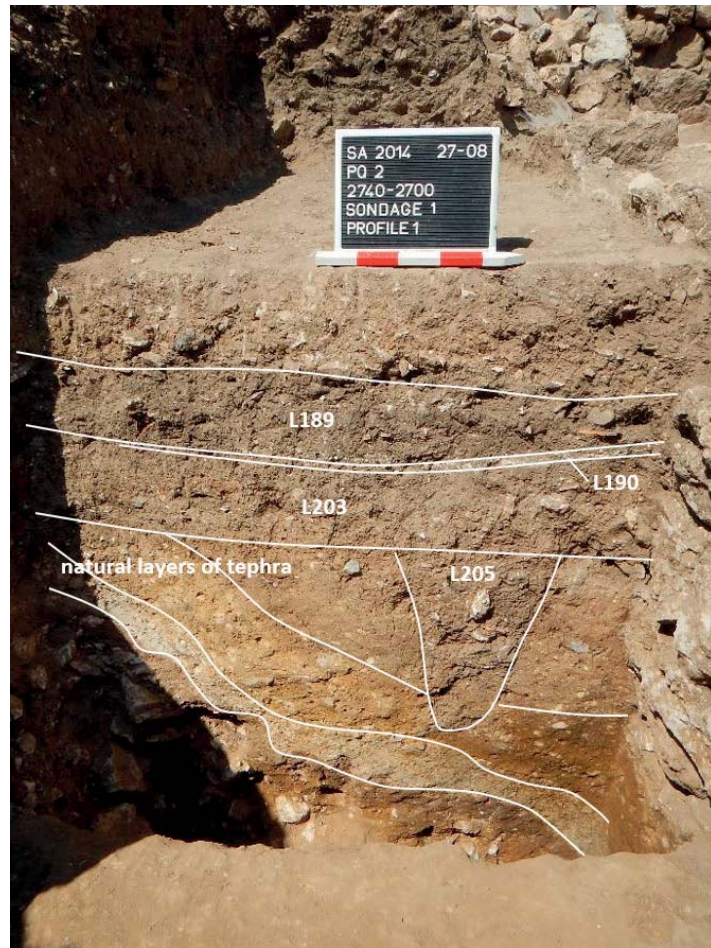


Fig. 5. Sounding west of the PQ 2 building, revealing the natural gully filled with tephra layers. L205 is most likely a posthole linked with the construction of the building; L190 is a thin layer of mortar associated with a walking level.





Fig. 6. Sounding north of the building, with the *schola* itself visible on the right and the partially dismantled terrace wall at the bottom of the picture.

## PHASE 2: ORIGINAL BUILDING LAYOUT

The building was erected around the middle of the 1<sup>st</sup> century AD as a simple rectangular structure (a ‘hall building’ or ‘*Saalbau*’, see Bollmann 1998, 103) with outer dimensions of *c.* 10.85 x 12.80 m (Figs. 2-4). The building was NNW-SSE oriented and is currently positioned on a gentle slope with the same orientation. The western foundations of the building were embedded in the abovementioned gully; the tephra layers were topped off and part of this material was used inside the building as substratum for the original walking level in room 2 and space 4 (see further). In the profile a posthole could be identified, dug into the tephra layers below (Fig. 5). Considering its stratigraphical position and the distance from the building’s western wall, the posthole most probably resulted from the construction of the scaffolding that was used for the construction of the building’s standing walls and roof.

The walls of the building were mainly erected in mortared limestone rubble, with the irregular use of some ashlar (probably *spolia* from older monuments) mainly in the outer faces of the wall and at corners. The width of the standing walls measured respectively *c.* 1.15 m for the northern wall, *c.* 0.9 m for the western wall, *c.* 1.15 m for the southern wall (only preserved at foundation level) and between *c.* 0.6 and *c.* 0.9 m for the eastern wall. The eastern wall was accommodated with two buttresses, subdividing the wall into three more or less equal parts. In between the buttresses benches were protruding *c.* 0.45-0.55 from the wall. No specific function could be ascribed to these benches, but their height above (original) floor level seems



to indicate they could have been used for seating. The inner faces of the walls were coated with white plaster all the way down to the protruding foundation level.

There are no indications for windows in the building nor did we encounter glass window pane fragments between the debris. Large parts of the west wall and the original south wall were dismantled to a level that might have obscured the presence of windows, but also the better preserved northern and eastern walls, in large parts standing to more than 1.50 m above the original floor level, did not show any window openings. These could have been situated higher up in the walls, and need not have been screened with window pane. Additionally, it is worth mentioning that some of the find assemblages, functionally associated with the building, contained a lot of oil lamps fragments (see further). In any case, within the building daylight seems to have been restricted.

The only feature discernible in the walls was a 2.4 m wide 'niche' in the northern wall (Fig. 7). The 'niche' was lined with large ashlar topped by a brick-built part of the wall (bricks measuring 40 by 40 cm; this is the only part of the original walls where brick was applied). The arrangement was similar in width, but not in layout compared to the new southern entrance created at the end of the 1<sup>st</sup> century AD (see further). Instead, this niche-like feature was plastered on the inside. The back wall of the niche was not more than one brick (40 x 40 cm) wide, although an additional 'bulge' was visible in the outer face of the wall (Fig. 8), most likely with the intention to reinforce its weakest part. Indeed, with the partial dismantling of the terrace wall, the northern wall of the *schola* had to be able to withstand the soil pressure.



Fig. 7. Northern entrance to the building, with ashlar/brick 'door posts' and remains of plaster preserved within the 'niche'. The steps leading towards floor level were dismantled, as was the case for the floor itself.

The difference in the levels of preservation of the back wall of this feature, in contrast to the rest of the northern wall of the *schola*, suggests that this feature cannot have served as an actual niche. As a window, it would not have protruded above the walking level outside the building. Therefore, we are possibly dealing with the original entrance to the building. The height difference of *c.* 1.35 m between the original walking level within the building and the Roman imperial street level that was exposed less than three meters from the



Fig. 8. Orthophoto of the 2016 sounding north of the building. The partially dismantled terrace wall is visible at the bottom of the trench and the northern entrance with the reinforcing 'bulge' central in the picture.

northern entrance meant that steps must have lead down into the building. The niche-shape of the entrance implied that the difference between the walking levels inside and outside the building was solved with a stepping arrangement inside the building. No such arrangements were encountered within this 'niche', but since the floors were dismantled throughout the building, the same might have happened to the 3-4 required steps leading to the top level of the 'niche'. Indeed, the original floor/level within the niche had been removed, exposing the foundation layer, and at least one layer of bricks was removed from the top of the 'niche' as well, probably including the original threshold. This stepping arrangement would in any case not have been an integral part of the wall's structure, but would have consisted of individual, dismountable steps, possibly in a perishable material. At first sight, the plastered surface on the inside of the 'niche' seems incompatible with this hypothesis, but the missing part of plaster in the centre might actually provide a clue as to the (limited) width of such steps.

As mentioned above, no structural floor level can be associated with this earliest phase of the building. Imprints in the mortar substratum along the drainage channel of the central water feature (see further) suggest that the original slabs or tiles were removed. No fragments of stone slabs were encountered during the excavations, while quite a lot of fragmentary brick and tile was recovered from the layers filling the building. Since brick was only very sparsely used in the standing walls, it is possible that these might originate from the original floor. However, even if that was the case, it is also possible that only part of the floor was arranged in this way.

Apart from the benches and buttresses along the eastern wall, the main infrastructure inside the building consisted of a central water feature, i.e. a fountain basin measuring *c.* 2.9 m north-south by *c.* 1.7 m east-west (Fig. 9). Only the heavily constructed substructure of the

fountain basin was preserved, made from large sized mortared limestone blocks and *spoliated* ashlar. These were not foundations, but formed part of the visible standing structure. The inside measured *c.* 0.85 by 1.70 m, with terracotta water pipes leading in from the north heavily set in mortar. The final, southern part of the water pipe was a vertical segment, which originally fed a – now disappeared – basin or some sort of other arrangement on top. The foundation trench of the structure contained potsherds dating to the first half of the 1<sup>st</sup> century AD, confirming it being a part of the original construction phase of the building.

In the original construction phase this fountain was the centre piece of the building, as it occupied the central position along the back wall, opposite the only entrance. It appears to have been constructed together with the southern wall, with which it was interconnected. A water channel supplied the fountain with water coming in from the northwest, possibly connected to one of the water channels exposed north of the building in 2012. This water channel consisted of *c.* 50 cm long and *c.* 15 cm wide (outer diameter) terracotta pipe segments. The joints between the terracotta pipes were sealed with a thick coating of mortar, suggesting the channel was constructed to sustain a high water pressure. The final, vertical segment of the channel had a smaller outer diameter (11 cm wide), possibly to build up even more pressure. Both the diameter of the pipes and the capacity of the outlet channel suggest that quite a lot of water, at a high flow rate, could be discharged through this water feature, justifying the term ‘fountain’. A similar water feature was documented inside the so-called basilica at Ostia, where the *collegium* (association) of the ferryboat skippers was accommodated. A water basin occu-



Fig. 9. Orthophoto of the substructure of the fountain basin.

plied the same position within the basilica as the fountain basin at the PQ 2 site, i.e. at the centre of the back wall (in the case of Ostia in front of the apsis) “in der Längsachse des Mittelschiffs” (Bollmann 1998, 275-278). The Ostia *schola* was erected under Trajan’s rule, but the water basin appears to have been a later instalment. No interpretation for its presence was offered.

South of the original building it was possible to follow the water channel that drained the superfluous water away from the basin (Figs. 2-3 and 10). The stretch of the channel situated within the later extension of the building (see further) consisted of a 18-23 cm wide bedding constructed of tile. The *c.* 20 cm high sides of the channel consisted of mortared small limestone and brick rubble, plastered on the inside. The channel was relatively remarkable in size, indicating that this entire system was prepared for a high flow rate. The channel was originally covered by stone slabs and the section inside the later



extension of the building presumably coincided with the walking level associated with the new southern entrance. Neither the slabs covering the channel, nor the associated floor were preserved, however.

Beyond the building, the southwest-bound channel curved further westwards before disappearing underneath the western profile of the southern trench (Figs. 2-3). While the section of the channel measured *c.* 0.4-0.5 m in width when exiting the building, it narrowed down to 0.25-0.3 m at its western extremity. The rubble used also became increasingly smaller and its layout less regular. The final meters did not have any apparent covering slabs nor actual channel bedding, thus allowing the water to seep into the ground or connect into the existing aquiferous(?) gully. In contrast to the section of the channel documented inside the building, no mortar nor bricks/tiles were used in its construction. At one point halfway the exposed channel a slab was missing, allowing for a small sounding within and underneath the channel. The material from the cut of the channel and from the layer immediately below could be dated to early Roman imperial times. The way the drainage channel was incorporated into the newly built southern wall during the alternation phase of the building around the end of the 1<sup>st</sup> century AD (see further), suggests that the fountain was kept in use in the next period, despite the changes in layout and probably also function of the building.

### PHASE 3: FIRST USE OF THE BUILDING

There are no direct indications (inscriptions, figurative mosaics, wall paintings etc.) to reveal the original purposes the PQ 2 building served during the second half of the first century AD. Any suggested identification of the building needs to be deduced from its location, its architectural layout, the facilities attested within (and outside) and the find contexts that can be linked with the use of the building.

The building is located in a suburban setting, but still forms part of the *continentia aedificia*, i.e. the continuously built-up area, sprawling beyond the actual city centre to the outskirts of the Eastern Suburbium. It is constructed in the immediate vicinity of a public spectacle building (the theatre) and surrounded by other large (monumental) structures. It lies at a cross-point of some of the main roads leading in and out of the Eastern Suburbium and is constructed partially on top of an aquiferous(?) gully. Architecturally it can be catalogued as a relatively large uninterrupted hall (so-called *Saalbau*), with one monumental entrance from its northern front side. The hall was entered by descending a small flight of steps and the space appeared to have been dimly lit. Benches were installed along the eastern wall. A central fountain basin against the back wall dominated both the hall itself as well as the view from the entrance. West of the building, a freestanding monument was partially uncovered. No find contexts linked to a specific function could be associated with the 1<sup>st</sup> century AD original building phase, but parallels might be drawn from later find assemblages found to the east and within the building (see further), even though those correspond with a radical change in the building's layout.

Most features of the original building seem to overlap with structures associated with cultic activities, especially the ones associated with cults dedicated to eastern gods such as



Mithras, Serapis, Isis and/or Harpokrates. A *mithraeum*, for example, generally consisted of a relatively small hall with benches/podia, no windows, steps leading down from the only entrance at one of the narrow sides, a vaulted ceiling and in most cases a water feature. These are normally located underneath existing structures or – ideally – in adapted caves, with podia on both sides of the cult room. None of these characteristics are definite, however. There are also no attested *mithraea* in the wider region (Bjørnebye 2007, 13-20, 56; Beck 2007, 102-152; Clauss 2012, 48-64, 73-74).

As mentioned, a sounding west of the building showed that the structure was founded partially on top of a rather deep gully. If this feature was still aquiferous at the time of construction of the building, there might have been a link between the choice for this construction site and the presence of running water in the immediate vicinity.

The suburban location of the PQ 2 building – outside of the actual city centre, but in close vicinity of major thoroughfares and other (monumental) structures – was customary for eastern cultic spaces, but the same can be said for club-houses and temples of professional associations (Verboven 2011; Smith 2003, 95). Did the Eastern Suburbium of Sagalassos provide the perfect breeding ground for an association sprouted from artisanal/funerary roots to be inspired by an exotic cult?

The location, architecture and furnishings of the original building in any case suggest a (semi-)public purpose<sup>1</sup> in which water played an important (presumably cultic) role. The *Saalbau* in principle could house a wide variety of communal associative activities, thus leaving a lot of functional options open. Associative groups could be based on professional (mainly traders and artisans), religious (cultic societies), territorial (residents that share a city quarter, *insula* etc.), ethnic (resident and non-resident foreigners etc.) or social (youth groups, *Augustales* etc.) grounds. The erection of the PQ 2 building in the Eastern Suburbium could have been inspired by either a professional or funerary background – considering the proximity of the Potters' Quarter and Eastern Necropolis – but also territorial (the Eastern Suburbium is a clearly defined and discernible part of the city), religious (for 'marginal' cults expelled from the city centre) or even social (in association with the theatre, where social groups might occupy their own section) reasons might have warranted its construction. Nevertheless, the link with a professional or religious-funerary association seems the most plausible. In any case, these organisations were almost always multifunctional and every social grouping was at the same time a cultic community (Scheid 2011, 535), while their core activity might have been either festive, funerary, economic or – illegally – political.

In order to keep options open in regard to a more definite identification of this building in the future, it is safe to call it a '*schola*', if we use this term in its modern scholarly sense as a 'Vereinshaus', being the communal building or 'club house' of an ancient association (Bollmann 1998, 47). Much in the same way we can apply the term 'collegia' to these types of social, cultic and professional associations, while the actual terminology used throughout antiquity, both in Greek and Latin, to denominate associations as well as the places where these gathered

<sup>1</sup> It is suitable to apply the term '(semi-)public' to the '*schola*' type of buildings: there were restrictions for participating in events (e.g. belonging to the target group, membership fees), but the location was neither private (like households, workshops etc.) nor truly public (like markets, theatres, baths, *tabernae* etc.).

is more varied. The *schola* could have been erected by a *collegium* itself – whether or not with the financial aid of an elite benefactor/patron – but might also be a building in municipal hands that is rented out to groups in need of facilities to organise their activities. Historian Jean-Pierre Waltzing described ‘*scholae*’ around the turn of the 20<sup>th</sup> century as rectangular, round or half-round spaces, with benches all round and containing one or more altars (Waltzing 1895-1900, I, 221). Beate Bollmann, writing almost a century later, established that this definition was too narrow and that, actually, all attempts at defining a *schola* would be inadequate ‘by definition’. In fact, for banquets and other social meetings, every closed and weather protected space could do, while for communal worshipping, an altar, podium and/or apsis could be added to the desired furnishings (Bollmann 1998, 47-48). The PQ 2 building’s architectural layout best fits the *Saalforn* type described by Bollmann, which were mostly constructed during the 1<sup>st</sup> century AD, with a *hausse* during Julio-Claudian times (Bollmann 1998, 105).

Certainty with regard to the identification as a *schola* can only be obtained through deciphering associated inscriptions and to some extent through the iconography of figurative depictions or cult statues, which is also why many presumed *scholae* cannot be linked with a specific *collegium* and *vice versa*. However, even if Bollmann does not define a specific architectural shape for the *scholae*, she mentions four criteria that can help in their identification (Bollmann 1998, 49): a decentralised location of the building, modest dimensions, a more exclusive character compared to known municipal cultic spaces and the building being a subsequent rearrangement of an older structure.

The first two criteria are clearly met by the PQ 2 *schola*. The third one is harder to assess solely on the basis of the available architectural data. The fourth criterion appears not to be valid in our case study, but rearrangements and adaptations to the original building itself will in fact play a part throughout the next phases of use of the building. Indeed, the building appears to have undergone a complete makeover around the end of the 1<sup>st</sup> century AD, suggesting some change of use as well.

#### PHASE 4: ALTERNATION PHASE

In a second building phase, most probably initiated during the later 1<sup>st</sup> century AD, the original south wall of the *schola* was dismantled to its foundations level and both the eastern and western wall of the building were extended towards the south (Figs. 2-4). These extensions applied the same construction techniques as the original walls, using a mix of mortared limestone rubble and (reused) ashlar and continued the same widths. In the south-eastern corner of the building a mortar preparation area was preserved below floor level (Fig. 11). Since no mortar was used in the construction of the new southern wall, this preparation area is probably to be associated with the southern extension of the eastern and western walls or with the newly constructed inner division walls (see further). The finds encountered within this preparation area dated to the late 1<sup>st</sup> and early 2<sup>nd</sup> century AD.

A new southern wall was constructed in between the eastern and western extended walls, most probably during the early 2<sup>nd</sup> century AD. This settled the southwards extension of the building to 2.8 m (measured from the presumed original inner/outer façade to the new

inner/outer façade); the total length of the building now amounting to 15.2 m (outer dimensions). In later phases, the wall was dismantled to threshold level. None of the standing parts of the door were preserved, but the pivot holes suggested a double door with a width of 1.55 m (Fig. 12). In contrast to earlier building phases, no mortar was used to erect this wall consisting of limestone rubble and reused ashlars. There are no indications that the northern entrance was closed off by this time, so the two opposite entrances must have functioned simultaneously.



Fig. 10. View from the northeast of the drainage channel which ran through the (later) south wall of the building.

The introduction of a new southern wall with its own entrance considerably changed the design and functioning of the building but did not interfere with the existing outlet channel of the fountain basin (Fig. 10). The wall was carefully built on top of the intact channel.



Fig. 11. Orthophoto of the mortar preparation area preserved underneath the (dismantled) floor level of the *schola*.

Originally, the fountain basin occupied the centre part of the south wall, immediately in the line of view from the northern entrance. This specific spot would draw the attention of any visitor entering the building, which is why it was in most cases reserved for a podium or an apsis containing the statue of the patron deity (Bollmann 1998, 103). Now situated as a more free-standing feature in the centre of the space, the fountain basin, apparently still in use, appears to have lost some of this 'privileged' location. However, the construction of new division, inner walls was to cut off the water supply to the fountain basin, as these walls' foundations were dug through the terracotta pipes in the northern section. Nevertheless, water could still have been brought in by hand and the basin might still have served a purpose, as is suggested by the incorporation of the runoff channel in the new layout of the building. The abrasion visible



on the edges of the basin's substructure could mean that the remains served as a bench or as a step to reach the actual basin. This might explain why several complete small ceramic cups (SRSW 1B120) were encountered within and around the structure. These cups were of the same type as the ones found in the communal dining dumps dated to the 2<sup>nd</sup> or early 3<sup>rd</sup> century AD located elsewhere within and east of the building (De Cupere *et al.* 2015).

The layout of a *Saalbau* with two separate main entrances in opposite walls is rather unique (and thus unlikely), which is why the subdivision of the northern half of the building into three smaller rooms probably took place around the same time as the construction of the new southern wall. This would have split the building into two more or less independent halves, with a larger southern half, containing the (remains of the) water fountain, and three rectangular rooms of more or less equal dimensions in the northern half (Figs. 2-4): a north-eastern room with a surface of 15.5 m<sup>2</sup> (room 1), a north-western room with a surface of 18.5 m<sup>2</sup> (room 2) and an eastern room with a surface of 18.9 m<sup>2</sup> (room 3). Room 1 could only be entered through the old northern entrance of the building; the two other rooms had to be approached from the southern entrance and the southern half of the building. The wall dividing the building in two halves was later dismantled to its foundation levels, but the 1.20 m wide door opening towards room 3 can still be recognized. A similarly sized opening towards room 2 is implied. All these walls were carefully executed in mortared limestone rubble (occasionally mixed with brick fragments). The north-south wall as well as the dismantled wall might have been interlocking, but the wall dividing room 1 from room 3 was clearly abutting the north-south wall.



Fig. 12. The threshold of the southern entrance to the *schola*, view from the west.



These changes to the building's layout must have been accompanied by (several) adaptations to the original floor as well. Even though there are no physical remains of a stone (or tile?) floor preserved in the building, it seems unlikely that the floor would have consisted of nothing more substantial than beaten earth. Firstly, this type of rooms needed to be easy to maintain and clean after each communal meal (see the *asaroton* described below), while some dining halls were equipped with elaborate water infrastructure for cleaning. It is therefore not unlikely that even if the fountain basin was no longer in use, the water outlet channel could still have been employed to drain cleaning water from the rooms. Secondly, there are no parallels for beaten earth floors in other *scholae*. Beate Bollmann mentioned the use of either mosaics or *opus sectile*, while complementing that marble slabs would have been more common in single-room halls (*Saalbauten*) and in remodelled *tabernae* (Bollmann 1998, 131). We presume that limestone slabs could have been appropriate as well. Thirdly, the outlet water channel was originally covered by limestone slabs, as can be understood from the preserved section outside the building. This cover would have been more or less at the same level as the presumed floor. Fourthly, throughout most of the rooms no fragmented finds were encountered that could be considered to have been trampled into a beaten earth floor, the absence of which should be striking if this level at any time served as a permanent floor. Indeed, locally (*e.g.* east of the fountain basin and outlet channel in space 4), concentrations of fragmented and trampled pottery were encountered at this level. Since these concentrations did not occur elsewhere in the building, however, these were probably associated with the works associated with the extension of the building towards the south. Indeed, this is the zone where the mortar preparation area was located and the chronology of the fragments confirmed a date around the late 1<sup>st</sup> or early 2<sup>nd</sup> century AD. Subsequently, this layer would have been buried underneath (stone) slabs.



Fig. 13. Red sandstone fragment, probably originating from decorative/architectural elements in the 2<sup>nd</sup>-3<sup>rd</sup> century AD schola setting.

In short, we presume there to have been a more substantial floor and stone appears to be the most adequate choice. Wood is not a likely alternative: it is more difficult to maintain in these circumstances and it does not seem to accord with the imprints in the mortar substratum along the drainage channel of the fountain basin. In the dumps associated with the PQ 2 building, a lot of limestone fragments were encountered that could be related with the removal of the floor and/or the dismantling of furnishings in the building. Among the stone fragments were an amount of red sandstone fragments, possibly originating from a decorative element, encountered in the different rooms (Fig. 13). Very few marble fragments were attested, and only around half a dozen tesserae, suggesting that the building was either never lavishly decorated or that the dismantling of the building happened very efficiently.

One later intervention north of the building involved the digging of an at least 1.45 m deep trench along the northern edge of the building (Fig. 6). This trench was subsequently backfilled with two almost vertically deposit-

ed fills. The northern layer contained only limestone rubble, no soil nor finds. The southern layer consisted of dark soil and contained ceramic finds dating mainly to the period 175-250 AD, but including late Hellenistic and early Roman imperial sherds. It is possible that the (further) dismantling of the terrace wall should be credited to this intervention phase. The most likely explanation is that this arrangement was intended to drain excessive water flowing downslope (and thus towards the PQ 2 site). Runoff water would have easily percolated between the rocks and could thus be diverted along the building's edges. Similar features, on a more modest scale, have been observed throughout Sagalassos along street edges.

#### PHASE 5: THE *SCHOLA* IN USE

The subdivision of an originally large open space into several smaller quarters constituted an important change in the building's architectural layout and internal furnishings that could have reflected a (significant) reinterpretation of its functionality. The building was altered from a more or less square, uninterrupted room, with one main entrance in the northern wall and a central fountain basin against the back wall, into a multi-roomed larger building, with one of the rooms having its own entrance from the outside (the original northern entrance of the building). In the *schola*'s new phase of use, the water feature was either completely abandoned or at least adapted to play its part in the new functionality of the structure. The material finds associated with this next phase of use of the building showed that it kept on serving as a (semi-)public structure, most clearly associated with communal dining throughout the 2<sup>nd</sup> and into the 3<sup>rd</sup> century AD. Even though the original building clearly went through significant changes, its identification as a *schola* can still be justified, not in the least because the term '*schola*' covers a wide variety of possible layouts and functions. Thus a single-space hall-type building installed for religious congregations or a multi-roomed building with communal feasting as its main function can both be labelled '*schola*', since these both catered for the needs of associative community life. The building might have been divided into smaller spaces in order to provide space for different groups at the same time, to provide adequate space for smaller parties (for rent?) or to use specific rooms for different purposes (*e.g.* storage rooms).

Jean-Pierre Waltzing described *scholae* as containing such facilities as 'preparation rooms', a kitchen, tables, a cistern, a shrine/temple and banquet rooms (Waltzing 1885-1900, I, 229-230). Banquet halls were often lavishly decorated with decorative floor pavements (mosaics, *opus sectile* etc.) and wall paintings, but those characteristics might only apply to larger *scholae* (Bollmann 1998, 127-155). Even though fragments of marble wall veneer and glass tesserae were found in very small quantities throughout the building, the absence of more substantial leftovers suggests that the cladding of the building remained modest throughout its existence. Even if the building would have been skilfully stripped of any valuable materials after it went out of use, that activity would have resulted in more fragments and traces of the original decoration. The only possibly decorative part of furnishing that can be traced in the building were a roughly carved limestone pinnacle (Fig. 14), if such belongs to the building at all, and the above-mentioned fragments of red sandstone (Fig. 13). The walls were apparently covered with a simple layer of white plaster, preserved along the lower stretches of wall throughout several rooms; at least in the north-eastern corner there appeared to have been a phase of re-plastering covering the faded original plaster.



Fig. 14. Roughly worked limestone pinnacle.

Archaeological remains of *scholae* demonstrate that some collegia constructed spaces for explicit use as banqueting facilities, most often in the form of *triclinia*, while other *scholae* include large multipurpose rooms, into which moveable couches/benches could be placed for communal meals (Ascough 2008, 33-34). There are no indications for fixed, permanent tables in the room(s) of the PQ 2 *schola*. This is not exceptional, since installing immovable furniture would severely limit the building in its (multi) functionality. If we are indeed dealing with a building used by a professional *collegium* or a cultic or funerary society, then *convivia* (communal meals in a festive setting) are only one of the possible activities that would have been part of the association's agenda. It was more common to make use of portable tables and chairs, which could be stored in an annex or upstairs room with the rest of the necessary amenities (tableware, cooking vessels etc., cf. De Vaux 1973, 11-12; Donahue 2004, 32). Probably most of the regular convivial events organized by collegia would not have required reclining on couches. The three rooms in

the northern half of the building were too narrow to properly install even temporary *triclinia* and the larger space 4 was unsuitable because of the position of the main entrance and the additional passages to rooms 2 and 3. Moreover, 'dining by *triclinia*' is more associated with domestic, small-scale and/or elite contexts (Dunbabin & Slater 2011, 440-443), while seated meals stood for a simpler, less honorific form of dining, for the other classes and for establishments such as *popina* and *tabernae*. Dining at tables with chairs must certainly have been a valid alternative – and possibly the only option – for many associations. The ancient written sources, paintings and mosaics suggest a preponderance of reclined dining (Dunbabin 2003, 79-83, 89-91, Figs. 41-42 and 45-47; Dunbabin & Slater 2011, 440, 443), but it should not come as a surprise that special occasions or elite settings which required formal reclining were more likely to be eternalized in text and image. Chairs were also claimed to be the 'weapon of choice' in less Romanised areas (Adkins & Adkins 1998, 176-177; Dunbabin & Slater 2011, 449). Large events, such as the 'final banquet' described below, could not have taken place at tables inside the building alone, even if all the rooms were being used at the same time. It is likely that the surrounding open space was part of the banquet setting, with additional tables, couches or simple mats/blankets for participants to enjoy their meals. Cooking the meal could have been an outdoor activity as well. Indeed, the emancipation of kitchens and their integration into the household's communal space is a very recent (and western) evolution; throughout time kitchens were either located in half open spaces (for example in the *atria* of Roman houses) or in small backrooms. A similar solution can be proposed for the PQ 2 *schola*, although a more permanent solution was in the making (see further).

The material deposits found inside (see further) and outside the PQ 2 *schola* can be directly associated with the working and functioning of the building. There have been few cases in which a building could be identified as a *schola* in the complete absence of both epigraph-

ic and iconographic confirmation. Research on Roman *schola* has indeed been mainly iconography- and text-based (e.g. Waltzing 1885-1900; Dunbabin 1999 and 2003; Smith 2003; Dunbabin & Slater 2011). To some extent Onno Van Nijf (on professional associations in the Roman East) but especially the abovementioned Beate Bollmann (on Roman ‘club houses’) included archaeological data in their studies (Van Nijf 1997; Bollmann 1998). Even then, the archaeological information available to them consisted mainly of observations concerning the buildings’ architecture and in some cases furnishings. Many positively identified *schola* were excavated in a different tradition, with little to no attention for (post-)occupational layers and their associated small finds. Even the one well-documented small finds assemblage specifically mentioned by John Donahue – i.e. the *Schola Praeconum* at Rome (Donahue 2004, 253, footnote 62, referring to Whitehouse 1982, 54) – actually concerned dump deposits postdating the use of the building.

During the 2012 campaign, a 2<sup>nd</sup> century AD dump of pottery and faunal remains was excavated immediately east of the eastern wall of the building. The dump was piled 0.7 m high against the wall, deposited on top of a (first half) 2<sup>nd</sup> century AD walking level coinciding with the exterior walking level associated with the ‘new’ southern wall. The faunal assemblage was already studied and reported by archaeozoologists Bea De Cupere and Sheila Hamilton-Dyer, the pottery by Jeroen Poblome and the archaeological context by Sven Van Haelst (De Cupere *et al.* 2015).

When looking at the typological composition of the ceramic material, it was considered striking how few types were well represented (Table 1): vessels for serving and consuming accounted for more than 87% of the total amount of sherds. The complete lack of misfired pottery, spacers and kiln waste, on the other hand, showed that we were not dealing here with one of the many Eastern Suburbium dumps from potter’s ateliers, while the homogeneity of

	Count	%	Weight (g)	%
Cups	76	8.5	641	3.2
1B150	98	10.9	1,355	6.8
1B170	87	9.7	1,307	6.5
1B190-1	120	13.4	1,515	7.6
Other bowls	64	7.7	1,791	8.9
1C100	139	15.5	1,075	5.4
1C120-3	29	3.2	361	1.8
1C190-1	33	3.7	496	2.5
Other dishes	82	9.1	3,094	15.5
1F150	146	16.2	4,854	24.2
other	25	2.8	3,541	17.7
Total	899	100.0	20,030	100.0

Table 1. Count and weight of the most represented Sagalassos red slip ware categories, types and variants within the 2<sup>nd</sup> century AD PQ 2 dump east of the *schola*. From De Cupere *et al.* 2015, 189, table 6.



the assemblage, together with its low fragmentation rate, made this specific dump stand apart from contemporary domestic waste encountered at Sagalassos. The ceramic assemblage best fit in a context of serving and consuming food in a larger (communal?) gathering of people. The relatively low quality of the material was shown by the slipped surfaces of the vessels, which pointed towards a less elite setting. The assemblage could be compared most closely to the Sagalassos red slip ware phase 4, dated to the second half of the 2<sup>nd</sup> century AD (Poblome 1999, 312). This corresponded with the ‘second life’ of the *schola* as described above: after its extension towards the south, the subdivision of the northern half into three smaller rooms and the abandonment of the fountain basin.

The faunal remains (Table 2) were compared with other Roman imperial (1<sup>st</sup> to 3<sup>rd</sup> century AD) assemblages within Sagalassos, identified as ‘common’ food waste (De Cupere 2001). The latter assemblages showed a preponderance of sheep and goat and an underrep-

	sheep/goat	cattle	pig
horn core	3	1	
cranium	3	4	44
mandible	25	107	28
teeth	36	44	48
hyoid	0	4	0
vertebra	6	140	19
rib	16	63	155
scapula	9	8	35
humerus	13	127	18
radius-ulna	21	178	28
pelvis	8	26	9
femur	7	86	24
tibia (+ fibula)	27	111	24
calcaneus	9	39	7
talus	1	31	1
podals	0	26	1
metapodals	54	22	46
phalanx 1	13	19	5
phalanx 2	2	7	1
phalanx 3	1	7	0
sesamoid	0	3	0
<b>Total</b>	<b>254</b>	<b>1053</b>	<b>493</b>

Table 2. Skeletal element distribution of the main domestic mammals in the PQ2-dump of the Eastern Suburbium, based on the NISP. From De Cupere *et al.* 2015, 179, table 2.

resentation of pig and cattle, which was in sharp contrast to the composition of the PQ 2 faunal assemblage, as shown by the abundance of cattle (58%), the atypical distribution of skeletal elements and the relative old age of slaughtered pigs and sheep/goat (De Cupere *et al.* 2015, 178-179, table 1; 19, table 7). The cut and chop marks on the bones suggested that the dismembering and portioning of the carcass took place somewhere else and the cattle bones might even have arrived meatless at the PQ 2 site. The main aim seems to have been the retrieval of the highly nutritional fat in the rounded end of the long bones, which was obtained by boiling the chopped or crushed spongy bone (Fig. 15). These practices were considered common in the process of preparing meaty parts for a soup or broth. All these diverging features of the faunal assemblage pointed to particular practices, in many ways reminiscent of a Roman imperial dump of faunal re-

mains encountered near the *castellum* at Zwammerdam (Netherlands), which was identified as a so-called ‘soup-kitchen’ (Van Mensch 1974, 159-165). An alternative explanation of the PQ 2 assemblage as originating for glue-manufacturing was invalidated, both on the basis of the faunal remains themselves, as well as on its obvious association with the remains of a very specific set of pottery (De Cupere *et al.* 2015, 192).



Fig. 15. Examples of chopped distal humerus of cattle, as found within the 2<sup>nd</sup> century AD PQ 2 dump east of the *schola*.

The cattle bones encountered within the dump east of the PQ 2 *schola* were interpreted as the remains of a soup-kitchen, but the presence of other domestic mammals showed that other food preparation also must have taken place at this location. The absence of cranial fragments and feet bones among the pig remains, as well as the higher age at which the animals were slaughtered, pointed towards the consumption of ‘second choice’ pork meat at the site. The same seems to be applicable for the sheep/goat remains, among which no young specimens were encountered. The use of cattle for making a soup or a broth pointed towards ‘second choice’ consumption as well.

Inhabitants of the Roman empire were certainly acquainted to soup, although most sources refer to non-elite settings. Indeed, when soups and broths became a common component of the Roman diet in imperial times, these were considered as food for the working class and were not mentioned by authors describing Roman *haute cuisine*. Ordinary households mainly thrived on any type of meal that could be prepared in a single cook pot, *e.g.* soups and broths, and also stews and porridges. When there were no official dinner obligations with invitees to impress, even the elite might have tried their hands on soups, which, after all, were apportioned with medicinal qualities such as clearing constipations, settling the ‘burning of the urine’ and increasing fertility (Rumble 2009, 23-29).

The dump was considered to have originated from communal dining activities in or near the *schola*, a building specifically designed to cater for groups of people. The pottery represented a large crockery set of simple Sagalassos red slip tableware, consisting almost exclusively of cups, bowls and dishes. Most of the faunal remains were indicative of the preparation of soups or broths, which is a relatively easy meal to prepare for large groups of people. The identification of the PQ 2 building as a place where communal dining activities took place could furthermore be convincingly confirmed with the excavation of a complementary context within the building itself (see further).

## PHASE 6: CONSTRUCTION OF THE KITCHEN ANNEX

The cooking facilities of the *schola* were uncovered during the 2016 excavation campaign at the site, when the trench was extended towards the south. Around the end of the 2<sup>nd</sup> century AD, a small, square annex space (room 5) was constructed southeast of the main building. The room measured *c.* 3.8 by 3.9 m (inner dimensions), with walls constructed in dry rubble measuring between 0.75 and 0.90 m in width (Figs. 2-4). The northern wall of the room consisted of the eastern half of the south wall of the *schola*, east from the entrance. In this way, the annex room was built against the main building and did not interlock with its walls. The absence of mortar in its construction was another distinguishable feature. Its limited level of preservation suggested that the upper parts of the walls might have been (partially) constructed of mudbrick, with possibly only the back wall constructed entirely in stone. The large amount of (fragmented) *tegulae* and nails encountered while excavating suggested that room 5 was at least partially covered with a tiled roof.

The presence and size of a sequence of fireplaces in the north-eastern parts of the room strongly suggested that this room was used as the kitchen for the (communal) activities ongoing inside the main building. No permanent kitchen infrastructure was encountered; the fireplaces appear to have been laid out immediately on top of the beaten earth floor of the room. The final phase that could be documented was clearly recognisable as an oval burnt spot, measuring *c.* 1.9 m by 1.1 m (Fig. 16). However, the cooking activities were clearly ongoing for a longer period of time, with the fireplace shifting position in the north-eastern part of the room. This gradually accumulated into a *c.* 15 cm thick layer of ashes, burnt soil and remains of charcoal. The relatively few ceramic sherds that could be collected from these lensings were dated to the period 175-250 AD (with two probably intrusive sherds dating to the 4<sup>th</sup>-5<sup>th</sup> century AD).

The same date (175-250 AD) was also retrieved from the various concentrations of finds encountered within the room and for the layers corresponding to the levels in which the lenses of burnt material had accumulated. The floor level on top of which the burnt lenses accumulated was easily distinguishable in the northern and north-eastern parts of room 5. This floor consisted of several strata. The best preserved section was located in the north-western corner of the room, where the entrance was expected to have been: the bottom layer consisted at least locally of horizontally positioned broken sherds (a feature not recognised elsewhere), on top of which subsequent layers were deposited: a thin layer of loamy soil, a *c.* 2 cm thick layer of gravel, topped with *c.* 1 cm of loamy soil.

In stark contrast, the fill in the southern half of the room appeared to consist of one layer of dark and relatively loose soil, recognised as one seemingly homogeneous, thick layer that continued above as well as below the floor level in the northern half of the room. Several concentrations of (almost complete) finds were encountered within this continuous packet, specifically along the southern wall and in the south-western and south-eastern corners (Fig. 17). The material was clearly reminiscent of the finds documented in the deposits encountered inside and outside the *schola* (see above and see further), thus mainly consisting of egg cups, dishes, bowls and oil lamps. Nevertheless, some more variety in types could be recognised, including cooking and serving vessels, that can be linked with the function of the room as a



Fig. 16. The kitchen annex. Left: with indication of the concentration of burnt soil (fireplaces). Right: the kitchen annex after the excavation of two test soundings.

kitchen. The observation that the same type of vessels appeared throughout a thick layer of fairly loose soil, spread vertically over more than 0.4 m, is an indication for an intervention that encompassed digging up the southern part of the room (*e.g.* a series of *pithoi* being dug out after abandonment of the premises). A smaller concentration with similar finds was also encountered in the north-western corner of the kitchen. The material retrieved from these layers and associated concentrations could be dated to the same time frame (175-250 AD), with some residual sherds dating to the period 25-75 AD in the abovementioned 'gravel layer'. Moreover, the layer immediately underneath the abovementioned floor level, as encountered in one of the soundings in the room, also provided the same date (175-250 AD) as the layers above the floor level.

This implies that these fireplaces only accounted for the final period of use of the *schola*. Through soundings within the room (Fig. 16), however, it was possible to shed more light into the preceding period. The soundings reached below the foundation levels of room 5's surrounding walls. A vague, but continuous line of mortar was encountered at a level below the walls (especially recognised in the eastern and western profile of sounding 3). The material collected from underneath this level in the profiles of soundings 2 and 3 contained pottery datable to the period 25-1 BC and early Roman imperial times. On top of this level a *c.* 8 cm thick lens of ashes and burnt soil could be recognised in the western profile of sounding 3, strikingly reminiscent of the remains of the fireplaces mentioned above, but *c.* 0.30 m deeper. The material retrieved from the layer immediately underneath the burnt soil could be dated to the period 25-100 AD. It is thus likely that the burnt lensing represented the oldest fire-place(s), corresponding in time with the conversion of the original building to the 'communal dining *schola*' around the end of the 1<sup>st</sup> century AD.



This phase predated the erection of room 5 in its current form; none of the surrounding walls were already built at that time. It is thus likely that the shelter for the original 'kitchen' was built in dismountable and/or perishable materials. That also explains why the walls of the annex were not part of the planned alterations when the building was extended towards the south. Indeed, these foundation trenches contained material that could be dated to the period 50-200 AD (with residual Augustan material encountered in the foundations of the southern wall), making the solidification of the 'kitchen annex' around the end of the 2<sup>nd</sup> century AD most likely.

As was the case for the main building (see further), room 5 appears to have been abandoned in the second half of the 3<sup>rd</sup> century AD. The layers topping the remains were difficult to differentiate, suggesting intensive later interventions in the soil. Locally, they held a lot of the fragmented *tegulae* and nails that most likely originated from room 5's roof. The layer immediately above the final floor level contained a small bronze bell with the inscription 'NIKA TYCHE'.



Fig. 17. Concentration of broken and complete vessels  
in the south-eastern corner of the kitchen annex.

## PHASE 7: THE 'FINAL BANQUET'

The well-preserved remains of an event (gathering or feast) were encountered throughout the building, in particular along the western wall and in the northern rooms (Fig. 18). The assemblage consisted mainly of ceramic tableware, faunal remains and glass vessel sherds. Finds were made throughout the rooms, but there were clear concentrations along the western and southern wall of space 4, along the western wall of room 2 and in the eastern half of room 1 (thus not in front of the entrance to this room). Because of the extensive surface that was covered by these dumped materials, the finds were collected per room, and also per concentration within rooms.



Fig. 18. Dense find concentrations within room 1 (top) and within the southern half of room 2 (bottom) of the *schola*.

The event of gathering/feasting/wasting has been preliminarily dated to the end of the 2<sup>nd</sup> or early 3<sup>rd</sup> century AD, in line with – but postdating – the existing tradition of communal meals described above. In contrast to the 2<sup>nd</sup> century AD dump(s) excavated outside of the building's eastern wall (see earlier), these materials were never removed from the building's premises. Another difference was the fact that the fragmentation rate of the remains was lower than the dump described above: many of the vessels were complete, others were broken on the places they were dropped and a large part of the sherds could be reconstructed as complete vessels during post-excavation refitting. As far as the pottery is concerned, this collection represented an even more homogeneous set of tableware compared to the dump east of the *schola*: the vast majority of the ceramic finds are made up by one type of cups and a very limited spectrum of bowls and dishes. The homogeneity, nature and stratigraphical position of the assemblage seems to result from practices associated with a single event. Moreover, the high level of preservation, with no indications for trampling, showed that the remains were covered up before the building was made accessible again. Each type is represented by several dozens of copies (Fig. 19); the small SRSW 1B120 salt-cellar or egg-cups were most represented among the completely preserved vessels, due to their small size, shape and relative wall-thickness. From the observations in the field it seemed more likely that every participant in the event – estimated at more than 50 people – was provided with a bowl (mostly SRSW 1C120), a dish (mostly SRSW 1C100) and a cup (mostly SRSW 1B120). Larger drinking cups and pouring vessels



Fig. 19. The most common pottery types encountered at the PQ 2 site: so-called 'egg cups' (SRSW 1B120), bowls (SRSW 1C120), dishes (SRSW 1C100) and oil lamps.

were also encountered, but in far smaller numbers; cooking ware was very much underrepresented. There were no obvious concentrations of specific types; the (few) types of tableware were encountered in more or less equal proportions throughout the individual concentrations.

The same assemblage also contained a lot of oil lamps; this might mean that the event took place or continued into darker hours or that the interior of the building needed additional lighting even during daytime. Fragments of glass vessels (mainly drinking vessels) were also present throughout the entire find assemblage, but there were less indications that these could be reconstructed into complete vessels. Among the finds were (only) four bone spoons, all of the same type (Fig. 20). Eating with hands was the more common practice in antiquity, with chunks of bread used to scoop up food (Smith 2003, 27-28). This was also the case for soups/





Fig. 20. One of the identical bone spoons found in the final event waste.

of fauna, apparently randomly distributed between the ceramic finds, with some bones still contained within vessels (further research on the faunal remains is required and planned). In addition to collecting the faunal remains, soil samples were taken in order to study the palaeobotanical remains as well. At first glance, the bones appear to be more diverse but also less well preserved compared to the bones from the ‘soup kitchen’ encountered in the 2<sup>nd</sup> century AD waste dump to the east of the building. During banquets it was the habit to throw bones, bits of bread (used as napkins) and other food scraps to the floor, where dogs could feast on them (Smith 2003, 27-28). In the case of the PQ 2 site, however, the faunal remains did not form a distinguishable ‘layer’ underneath the pottery; pots and bones were equally mixed in the assemblage. The remains of the banquet indeed appear to have been thrown/swept to the side after the feast was finished, apparently in order to allow for some passage (see for example the ‘waste-free’ stretch along the eastern wall of room 2 in Fig. 18). Moreover, the amount of vessels encountered within the walls represented more people than could have participated inside the building, which means that the remains of the outdoor part of the feasting must have been brought in as well.

The common practice during Roman times to drop remains of banquets on the floor was translated into an iconographic theme in its own right: the ‘*asarotos oikos*’ (incidentally ‘*oikos*’ is also used to describe *scholae*, cf. Smith 2003, 94) or simply ‘*asaroton*’ (‘the unswept room/house’). The remains were left for house pets to profit and were only cleaned up after the meal, which is one of the reasons why the floors had to be easy to

broths, which were soaked up with bread (van Mensch 1974, 164). But it might also be that a majority of wooden spoons did not preserve in the archaeological record or that spoons – being more valuable and possibly regarded as personal items – did not form part of the set of materials available as part of the PQ 2 *schola*.

Besides the ceramic artefacts, the find assemblage also contained lots



Fig. 21. Some of the needles and hair pins, found within the *schola*.



clean. Nevertheless, none of these depictions show broken pottery as part of the waste, which might be explained by the elite settings of the mosaics and the use of more valuable items for serving and consuming. But it perhaps also reflects how discarding vessels after a meal was not the common practice. We should probably interpret the pottery in the dump east of the PQ 2 *schola* as resulting from the occasional breaking of pottery during a series of communal meals. This seems to be confirmed by the proportion of pottery vs. faunal remains within the assemblage, which is much lower for the dumps outside the building. The waste encountered within the building has to be interpreted differently, as it is clear that the whole crockery set used during the event was buried together with the food remains.

Other worked bone items present within the dump inside the *schola* consisted of pins and needles (Fig. 21). Since all other finds should be understood within a communal dining context and because of the homogeneity and completeness of the assemblage, we suggest that also these bone needles and pins should be explained within the same setting. The bone pins are most likely to be explained as hair-dressing attributes, while the same might be an explanation for the needles as well. These finds also raise questions on the representation of gender in the event.



Fig. 22. Stone gaming piece(?), found among the banqueting waste in room 2 of the *schola*.

In the same assemblage two small stone artefacts were registered that probably should be identified as gaming pieces: a small white stone token with a plano-convex vertical section and a rectangular piece with circular recesses on both sides (Fig. 22). Entertainment appears to have been standard in banquets (as it was during symposia): music and dancing, dramatic and comedy plays, riddles, poetry and philosophical discourse (Smith 2003, 34-38), but there is also reference in texts and iconography to games and gambling, especially preceding the banquet (Dunbabin 2003, 157; Dunbabin & Slater 2011, 449; 452). Public gambling was in fact considered illegal throughout most of Roman history, but the legislation was easily circumvented by using inscribed tokens, so-called roundels, with a monetary value instead of coins. The white token could have been used in a variety of Greek and Roman board games. Then as now, games would have required two sets of round tokens or counters, generally a dark (black) and light (white) coloured set, which sometimes carried the

owner's initials or name. Any suitable, durable type of material could be used to make the tokens (bone, ivory, stone, glass and terracotta account for most of the tokens that survived, while wood might have been a very popular material). The round gaming piece found in the PQ 2 *schola* did not carry any inscription, ruling out its use for games in which symbols on the tokens were needed to individualize the gaming pieces. Possibly also the several astragali encountered throughout the waste, seemingly the odd ones out within the faunal assemblage, were actually gaming pieces for popular knucklebones games.

Nine coins were found in association with the use of the building as a banquet hall and/or soup kitchen (Fig. 23). They represent a chronologically distinct group (117-270 AD)

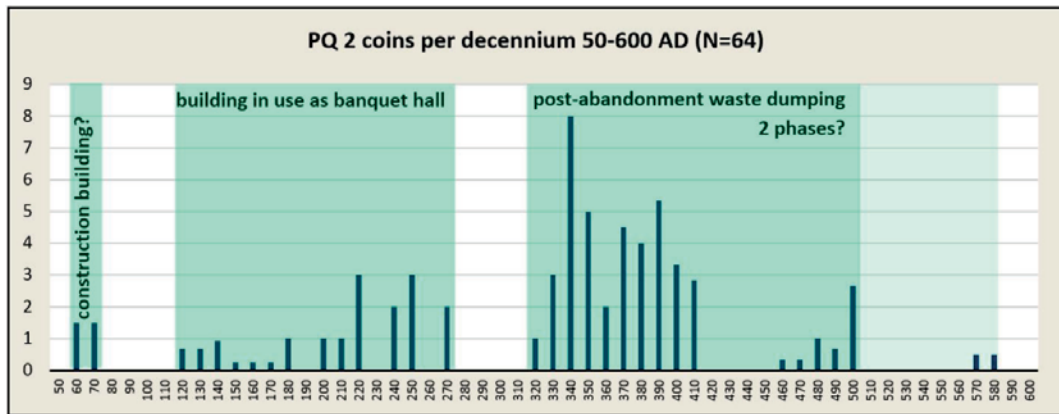


Fig. 23. Bar chart of the chronological distribution of the 64 dated coins registered during the 2011-2016 excavations. Identifications by Fran Stroobants and Johan van Heesch, Coin Cabinet of the Royal Library of Belgium.

among the total set of coins encountered at the PQ 2 site, which covers imperial, late Roman and early Byzantine coinage. The later coins – one coin dated to 241-244 AD (Gordianus III), one to 244-429 AD (Philippus II) and one to 268-270 AD (Claudius II) – possibly date to around the time of the event leading to the deposition of these remains, or at least from when the remains were buried. Since the deposition of protective layers on top of the waste was suggested to have happened immediately or shortly after the event itself (no trampling and little disturbance of the remains, similar pottery encountered throughout the layers on top), there is little wiggle room for an alternative explanation for the presence of these 3<sup>rd</sup> century AD coins. There also looms a notable gap between the 3<sup>rd</sup> century AD coins (associated with the use of the building) and the reappearance of coins from 312 AD onwards (associated with dumps covering the remains of the building). The small sample of coins originating from the PQ 2 site (n=64) does not allow drawing statistically significant conclusions from the absence of coins for this period. However, the abundance of coins dating to the period 310-410 AD present in the higher dump layers within and outside of the building give us a *terminus ante quem* for the abandonment of the building as a banquet hall. We thus suggest a late 3<sup>rd</sup> century AD date for the ‘final event’ eternalized in the banquet waste, with a predilection towards the period around or shortly after 270 AD.

The date retrieved from the coins does not contradict the preliminary chronology obtained for the ceramics (Bes 2016, unpublished internal report). Nevertheless, the seriation work on the pottery assemblage from these deposits is a work in progress and will provide us with independent chronological criteria for dating this context.

After these communal dining events, followed by the dumping of the festal remains, there are no indications that the building remained in use for communal purposes in the following centuries. Indeed, throughout the building we see that the waste of the ‘final event’ was covered with a thick package of earth and waste. This considerable increment of depositions within the rooms, sometimes accounting for a raise in walking level to up to 0.60 m, would appear to have rendered the building unfit for further communal use. It might indicate

another considerable shift in the building's functionality, but no evidence was found for any specific type of activities inside the building, apart from its partial, planned demolition in later times. All indications seem to point out that the banquet dump inside the building should be considered as a final communal event organized within the *schola*: the banquet was apparently meaningful enough for its 'remains' to be left as a 'reminder' inside the building's premises as it concluded a particular phase of use. A preliminary study of the faunal assemblage (De Cupere 2015, unpublished internal report) suggests that the variety of the consumed foods revealed a more unique occasion as well, when compared to the soup kitchen dump associated with regular events encountered east of the building. Insofar relevant, an inscription from Lanuvium (Italy) mentions a simple meal of wine, bread and sardines for the regular gatherings of the Worshippers of Diana and Antinous (Smith 2003, 97-100; 127), which stands in stark contrast with the exotic fruits that were specially imported for the banquets held by a *collegium* of rich businessmen in Rome (Dunbabin 2003, 99).

#### PHASE 8: THE *SCHOLA* ABANDONED

The communal dining event that resulted in the waste deposits within the building also seems to have marked the end of communal use of the building. The banqueting dump was fairly rapidly or not immediately covered with a thick layer of soil containing contemporary waste, which created a new, higher walking level within the building. There are no indications that the later walking level(s) were ever substantialized into stone or tile; these consisted of mere beaten earth. There are no indications for communal activities within the building after the 3<sup>rd</sup> century AD, even though there are still interventions within the building that show that the building was not completely abandoned.



Fig. 24. Wall L104, dividing room 2 in two halves, built on top of the layer containing the remains of the 'final banquet'.

One extra inner dividing wall was installed after the abandonment event, dividing room 2 into a northern and southern half. The wall was constructed on top of the 'final banquet' waste layer and abutted both the western outer wall of the building as well as the inner wall separating room 2 from rooms 1 and 3 (Fig. 24). The wall was fairly narrow (0.40-0.45 m) and built in a less regular fashion compared to the other inner dividing walls. The new wall would have made access to the northern half of room 2 impossible, but this was solved through the partial dismantling of the northern half of the inner dividing wall and the already mentioned increment of the floor levels throughout the building. By doing so, the northern half of room 2 could be accessed from room 1 and thus via the original northern entrance to the building, with the remains of the dividing wall serving as a threshold between the two rooms. Indeed, a new ramshackle wall was built on top of the remains of the dividing wall, but a door opening was kept open. No activities could be associated with this phase of use.

At the latest during the first half of the 5<sup>th</sup> century AD the building fell in permanent disarray, after which it was partially dismantled. The lack of limestone rubble and possible roof elements in the fill of the building indeed suggests that the walls of the complex were intentionally taken down to a certain height (c. 1583.3 m asl). Several larger limestone blocks, some of which (fragments of) ashlar, were stacked neatly along the remains of the eastern wall of the building. The blocks were resting on top of a late fill; the building must have been out of use at this time. There was no use of a mortar agent and there were no further indications that these blocks served a structural purpose.

The abandoned site, already to a large extent backfilled with soil, was subsequently used as a dump for refuse from nearby pottery workshops. The large amounts of production waste, such as kiln spacers and misfired pottery, but especially the presence of terracotta figurines and moulds for ceramic *oinophoroi* suggested that the neighbouring *coroplast* workshops (Murphy and Poblome 2016), 35 m more to the east, used this site as a dump during the late 5<sup>th</sup>-early 6<sup>th</sup> century AD. The dump actually consisted of several individual waste heaps, one of them starting at the top of the eastern wall and fanning out towards the west. The other major dump seemed to follow the northern half of the western wall of the building.

West of the western wall of the building a stratigraphy of pebble- and stone-rich deposits was uncovered, interpreted as possible substrates for consecutive streets or squares. The geophysical survey of the area suggested that this was the location where the street leading into the Eastern Suburbium from the city centre split into two, with sections running respectively north and south of the PQ 2 building. However, these deposits were situated well above the floor level of the *schola* and thus probably represent later phases. Sherds from these layers indicated a date in the late 5<sup>th</sup> century AD.

Sometime during the following decades, an irregular pit with a width of 2.25 m, a length of 7.4 m, and a maximum depth of 1.25 m was dug through the dumps in order to reach the west wall and to recuperate stones as *spolia* (Fig. 25). The wall was 'quarried' to a depth of 1 m below the elsewhere preserved height. This activity can most probably be identified as a robbers' trench. The pit was later back-filled with the previously excavated material, including many pieces of mortar, brick, and small limestone rubble and chips from the original wall. The presence of many fragments of terracotta water pipes suggested that a water channel was destroyed as well during this process. It is possible that a makeshift floor made of broken





Fig. 25. The western wall of the schola was mined post-abandonment. The improvised floor created of brick and tile fragments (on the right) might be related with this activity.

fragments of brick and tile, as well as a small kitchenette – consisting of some dry rubble walls as well as a badly preserved brick-built oven on top of the remains of the north-south inner dividing wall – can be associated with this dismantling phase. This arrangement hinted at short-term improvisation in order to provide some basic amenities to people occupying the already abandoned and partially dismantled premises.

The final structural interventions that could be witnessed at the site concerned a series of early Byzantine walls. These walls, encountered at all excavated sites in the central parts of the Eastern Suburbium, followed a different orientation than all earlier infrastructure and were buried only superficially underneath erosional layers. In the case of the PQ 2 site, walls were built over the remains of the south-eastern corner of the *schola*, forming a triangular closed off space (Figs. 3-4). These were not interlocking, with each wall appearing to have been built separately. The continuation of the east-west oriented wall as well as several other, similar walls was registered within the same stratigraphical layers to the west of the *schola*, immediately below

top soil. All these walls were haphazardly built dry walls, consisting of medium and large-sized uncut limestone rubble, with a width of 0.50–0.70 m and a height below 0.50 m. Based on the fragmented sherds trampled into a walking level that could be associated with these features, the walls could have been constructed in the 5<sup>th</sup> or early 6<sup>th</sup> century AD. Coins dating to the second half of the 5<sup>th</sup> (5 coins) and the third quarter of the 6<sup>th</sup> century AD (1 coin) were encountered in the surroundings, but could also be linked with the 5<sup>th</sup>–6<sup>th</sup> century AD dump that covered large parts of the site.

The lack of an associated find assemblage and the observation that the wall remains consisted of no more than one stone course – while the stones in the immediate surroundings did not allow for the reconstruction of a very substantial feature – suggested that the walls might not have had a structural purpose, but were merely used to delineate a certain area. It is also unlikely that these walls could have served as the plinth for a mudbrick standing wall; the lack of foundations and bonding agent would have rendered them useless as a load-bearing base.

Walls with remarkable similarities in building techniques, dimensions, stratigraphical position and even orientation (even though the latter can at least partially be explained by the local topography) have been encountered at most other studied sites within the Eastern Suburbium. Another similar trait, i.e. the lack of directly associated finds, makes it problematic to propose (a) function(s) for their construction. Their building style strongly suggested that these walls were not part of covered structures, but should rather be interpreted as walls delineating specific areas. Agricultural terracing has been proposed, but these walls were in some cases built on level terrain and did not show the structural integrity nor any of the building techniques required for retaining walls. This does not, however, rule out agriculture as the main reason behind their construction. Improvised walls could have been easily erected with the stones collected during field clearance, while at the same time serving to delineate individual plots of land. This hypothesis is strengthened when understood in connection with early Byzantine water channels that were preliminarily associated with irrigation practices. Additionally, we observed during the neighbouring *coroplast* workshops excavations how the upper strata of soil were remarkably loose and deposited horizontally, which also was linked to agricultural activities.

The triangular structure in the south-eastern corner of the PQ 2 excavation trench has the size and height of the post-occupational corrals encountered elsewhere within the Eastern Suburbium, but the lack of an opening and the shape makes such an identification unlikely. The structure might have served as a makeshift shelter, by building a perpendicular wall in order to close a corner of an (agricultural?) plot defined by already existing walls. A wooden upper structure might be imagined, since the walls seem less fit to carry an upper structure in sundried mudbrick. A walking level was recognised within and to the northwest of the structure, suggesting a degree of use of the area.

With the reappearance of agriculture and husbandry into the quarter, the history of the Eastern Suburbium had come full circle. While the remains of a millennium of intensive artisanal, funerary, religious and communal activities would be gradually wiped out from late antiquity onwards, the area was never to be completely abandoned by shepherds and farmers, including today.

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## URBANISM BEYOND THE ACROPOLIS The Tayinat Lower Town Project Surface Survey, 2014-2015

James F. Osborne and Steven Karacic\*

### *Abstract*

*Although the capital cities of the Syro-Anatolian city-states (also known as Syro-Hittite, Neo-Hittite, Luwian, and Aramaean) have been excavated for generations, archaeologists have only rarely investigated their large lower settlements beyond the monumental buildings in the acropolis. The Tayinat Lower Town Project began in 2014 with the explicit goal of conducting systematic fieldwork in the lower settlement of Tell Tayinat, ancient Kunulua, the Iron Age capital of the kingdom of Patina. The first two seasons were dedicated to an intensive surface survey of the entire lower town, roughly 16 ha in size, in order to obtain as holistic a picture of the ancient city as possible before planned excavation takes place. This article presents the findings of this research, which complement and expand our understanding of urbanism in Iron Age Anatolia.*

### INTRODUCTION AND RESEARCH QUESTIONS

The Tayinat Lower Town Project (TLTP) began in the summer of 2014 as part of a long-term effort to understand the archaeological remains of the large lower settlement of Tell Tayinat, located in the Amuq Valley of southeastern Turkey (Fig. 1). Tayinat consists of two major morphological units: a low-lying tell roughly 20 hectares in size, and an additional 16 hectare lower town that extends around the eastern half of the site. Today the lower town lies under the floor of the valley due to the accumulation of alluvium from the Orontes River, located 700 m south of the site. This morphological feature has rendered systematic exploration of this quarter of the site a major logistical challenge, and as a result we know little about the nature of settlement in this area. This article presents the results of two seasons of systematic surface survey of Tayinat's lower town, aimed explicitly at providing an understanding of the socioeconomic processes of the ancient city as a holistic entity instead of the piecemeal picture provided by limited, opportunistic excavations.

Tell Tayinat was the focus of large-scale excavations in the 1930s by the Syrian-Hittite Expedition of the University of Chicago's Oriental Institute, who focused primarily on the acropolis and its monumental remains of the early first millennium BCE, or Iron Age II and III (ca. 925-600 BCE); only the architectural remains from these levels have so far been published. (Haines 1971). A number of small soundings also revealed Early Bronze Age levels contemporary with excavations conducted at other sites in the valley, and this material contributed to Braid-

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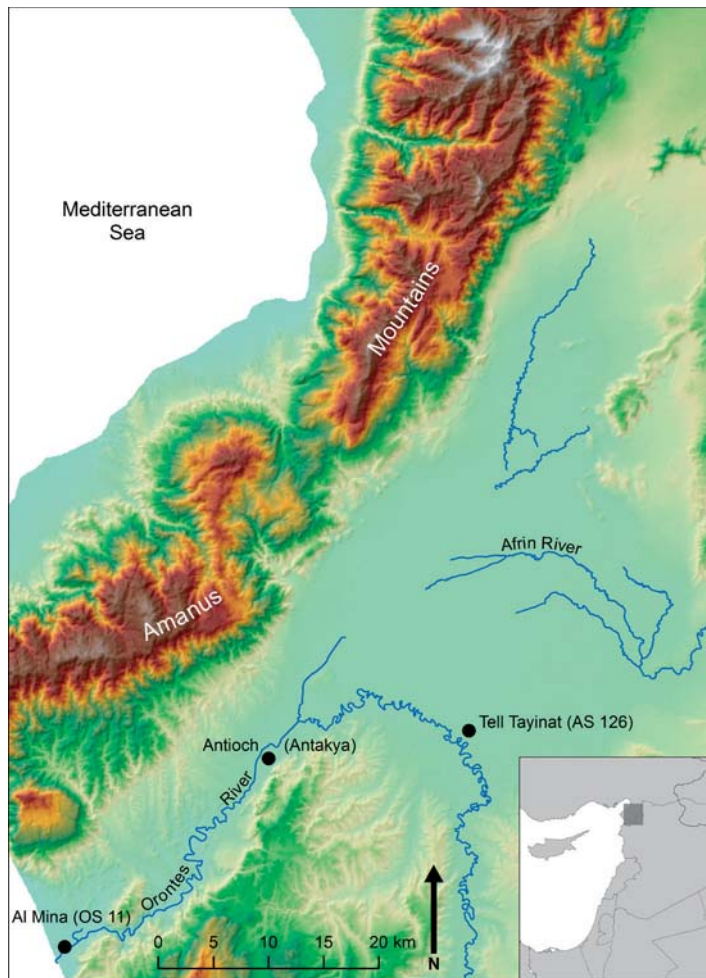


Fig. 1. Map of the Amuq Valley in southeastern Anatolia with the location of Tell Tayinat.

wood's prehistoric ceramic sequence of the Amuq, especially Phases H-K (Braidwood & Braidwood 1960). Excavations at Tell Tayinat resumed in 2004 under the auspices of the University of Toronto's Tayinat Archaeological Project, directed by Timothy Harrison. In addition to the discovery of an additional monumental building dating to the Iron Age II and III period, these excavations have documented several earlier phases of occupation undetected by the previous expedition.

Cumulatively, the Syrian-Hittite Expedition and Tayinat Archaeological Project have created a robust archaeological and historical sequence. The tell was occupied during the Early Bronze Age, ending with a large structure dated late in the third millennium BCE, or Phase J in Braidwood's Amuq ceramic sequence (Welton *et al.* 2011). Following the

Middle and Late Bronze Ages, during which Tayinat was uninhabited, the site was reoccupied during the Iron Age I period, roughly 1200-925 BCE, at which time its material culture is partially characterized by locally made Mycenaean IIIC pottery and other aspects of Aegean-style material culture such as unbaked clay loom weights (Harrison 2009; Janeway 2017). At this time Tayinat was likely the capital of the kingdom of Walistin/Palistin as indicated by Luwian inscriptions found at the site and in a number of monuments from other sites including Aleppo, Arsuz, Meharde, and Sheizar (Weeden 2013). The subsequent Iron Age II is the best attested period archaeologically and historically. Large-scale horizontal excavations made in the acropolis discovered a series of monumental buildings including temples (Harrison & Osborne 2012) and *bit-hilani* palaces, the diagnostic architectural form of the Syro-Anatolian city-states (Haines 1971; Osborne 2012). Scholars have long assumed that Tell Tayinat was the ancient

city of Kunulua, capital of Patina, a later etymological derivation of Walistin/Palistin. The identification of Tayinat as Kunulua was confirmed recently by the discovery of a large tablet bearing a succession treaty between Esarhaddon and an unnamed local ruler that names the city as such (Lauinger 2012). Patina was one of roughly a dozen Syro-Anatolian (also referred to in scholarship as Neo-Hittite, Luwian, Aramaean, or Syro-Hittite) city-states in northern Mesopotamia and southeastern Anatolia including Carchemish, Sam'al, and Hamath, among others (Osborne 2014; Harmanşah 2013; Hawkins 2000). As part of a region-wide process in which the Syro-Anatolian city-state system was subsumed by the Neo-Assyrian Empire, Tayinat was conquered by Tiglath-pileser III in 738 BCE, converted into an Assyrian province, and reoccupied by the Assyrians who built a governor's residency on the south edge of the city (Harrison 2005). The late 8<sup>th</sup>-7<sup>th</sup> C Neo-Assyrian settlement marks the last phase of the site's occupation.

Yet despite this relative wealth of information about the sequence of occupation and the historical significance of Tayinat, our knowledge of the settlement has remained almost entirely restricted to the tell itself, meaning that just under half of the city has barely been systematically investigated. In addition, this portion of the site is very likely the residential area of non-elite individuals, such that our understanding of the ancient city is also badly skewed in favor of elites. For these reasons the Tayinat Lower Town Project was begun in 2014. TLTP is a long-term initiative with several related research objectives: (1) characterizing the archaeological signature of non-elite residential households in a major Syro-Anatolian urban center; (2) understanding the Syro-Anatolian specialization in metal and ivory craft production that is often presumed to have taken place in these large cities' lower towns; and (3) given Tayinat's status as a city whose population was deported and then resettled with refugees from elsewhere (Tadmor & Yamada 2011), exploring the cultural interactions set in motion by the Neo-Assyrian forced migration event, which to date has been studied only through historical documents (Oded 1979).

All of these research questions are best approached by means of an overarching strategy that involves an understanding of the nature of settlement across the entire lower town as determined through surface survey and remote sensing on the one hand, combined with focused analysis of material cultural attained through targeted excavations on the other. The excavation stage of the project is planned for the near future. This article presents the first stage of TLTP's field research, a high-resolution intensive surface survey of the entire 16 ha lower settlement. The results of this survey have generated a great deal of information about Tayinat's lower town, especially with regard to its density of occupation across the site, differences in the functional use of space, and possibly even the locations of specialized craft production areas.

#### PREVIOUS WORK IN TELL TAYINAT'S LOWER TOWN

As described above, the Syrian-Hittite Expedition excavations concentrated almost exclusively on the acropolis. The main exception was a gateway, labeled Gateway XI, that the Chicago excavators exposed on the eastern edge of the lower settlement two hundred meters east of the tell (Haines 1971: 59). Since Gateway XI lay due east of Gateway VII, a gate located on the east edge of the acropolis, two test probes were placed along the east-west line between

the two structures in which an 8.8 m wide paved road was discovered (Haines 1971: 60). (The location of these two probes is indicated in the Haines volume's overall excavation plan Plate 93, though illustrations of the street itself are not provided.) Together, Gateway XI and the highly restricted exposure of this east-west street were the extent of the Syrian-Hittite Expedition's efforts in this area.

Prior to the University of Toronto's resumption of excavations, a brief survey of the lower town was conducted in 1999 in part as preparatory research in anticipation of long-term fieldwork at the site. By this time the extent of the lower town was indicated in declassified CORONA satellite imagery that not only documented the size of this area but even illustrated part of its fortification system (Fig. 2). The 1999 surface survey of Tell Tayinat, which included both the tell and the lower town, was primarily interested in dating the occupational history of the site. Results indicated the site's Early Bronze Age occupation stretched across the entirety of the tell, including Red Black Burnished Ware sherds related to the Early Transcaucasian Culture phenomenon, in this region introduced during Amuq phase H. The lower town, meanwhile, was determined only to have been occupied during the early first millennium BCE, or Amuq phase O, as characterized predominantly by Red Slipped Burnished Ware. This finding was accomplished by means of fifteen radial pedestrian transects surrounding the east side of the tell, with ceramics collected every ten meters by the surveyor. At the same time, a geomagnetic survey documented the existence of magnetic anomalies beneath the valley surface in this area, in possible rectilinear formation, suggesting the presence of non-monumental architecture (Batiuk *et al.* 2005: 175-7, Figs. 7.6, 7.11). An expanded geomagnetic survey was undertaken in 2010 by Charly Bank, this time demonstrating areas of magnetic anomalies that align in what appear to be street networks (Osborne 2017: Fig. 5), including an east-west line running between the areas of Gateways VII and XI, that is, the same location where test trenches in the 1930s found the stone-paved street.

In sum, our knowledge of this half of the site is highly restricted in comparison with the amount of information that excavation has brought to light in the acropolis. Earlier efforts have demonstrated conclusively that settlement existed in a large lower town, and that it dates predominantly to the city's height during the Iron Age II and III. TAP has long sought to return to the lower town to complement its



Fig. 2. CORONA satellite image of Tell Tayinat illustrating the lower town. Note the lines of the city wall, especially in the northeast portion of the fortification system.



excavation efforts on the tell, but the logistical problems presented by the alluvium combined with the need to attend to pressing discoveries on the acropolis itself have precluded this from happening. In order to improve our understanding of this huge portion of the ancient city, to devise a methodology that might compensate for the hurdles posed by site morphology, and to begin addressing the three research questions outlined earlier regarding social and economic lifeways during the early first millennium BCE, TLTP developed a highly intensive program of surface survey that was implemented in the 2014 and 2015 field seasons.

## SURVEY METHODS

Tell Tayinat's lower town is covered with such a vast amount of material culture that a sampling strategy was necessary for reasons of practicality. As with any sampling strategy, the challenge was to arrive at a balance between resolution and intensity on the one hand, and areal coverage and time on the other. The site was already divided into a grid for the purposes of excavation using the Universal Transverse Mercator WGS 1984 projection; this grid separates the site into  $10 \times 10$  m units with their own unique designation in the recording system. TLTP expanded this grid across the lower town and treated each square as a separate collection unit. We adopted a probabilistic sampling strategy, collecting materials from units spaced every other twenty meters. This results in 25 survey units collected per hectare, or 25% coverage across the lower town (Osborne in press-a). Survey units were located on the ground using handheld Garmin GPS 62s devices, which consistently provided accuracy of under half a meter, or less than a single stride on the part of a surveyor.

Complete recovery of the ceramics within each  $10 \times 10$  m unit would be excessively cumbersome. TLTP thus employed the survey methodology developed by Tell Brak Suburban Survey (Ur *et al.* 2011), according to which each survey unit was divided into two separate collections. The first consists of the entire  $10 \times 10$  m square, from which all diagnostic sherds (rims, bases, handles, and decorated sherds) and all objects were collected. The second was a  $2 \times 2$  m square in each survey unit's southwest corner, from which all objects and sherds were collected, including non-diagnostics. This method is well suited to providing data that address the nature of settlement across a large spatial area. Diagnostic pottery collected from the total survey unit can be used to detect different functional areas across space, such as areas with disproportionately high frequencies of storage jar rims that might be a product of centralized storage. The recovery of all sherds from the smaller sub-section of the survey unit, on the other hand, while not providing a sense of the functional distribution of space, can nevertheless serve as evidence for the density of settlement across the lower town. To the extent that sherd counts and weights – both were measured from the  $2 \times 2$  m collection sub-units – act as proxies for the quantity and density of ancient settlement, this data can be mapped across the survey universe to provide a sense of which neighborhoods had the densest settlement, and which areas were comparatively less occupied.

Tayinat's lower town is today divided into three fields that create discrete survey regions. The first is a field to the north of the tell that at the time of survey (July 2014) was occupied by full grown corn plants that made for challenging survey conditions, but that coun-

terintuitively provided excellent visibility at ground level. The second was a field south of the modern Antakya-Reyhanlı highway that at the time of survey (June 2014) was fallow. Of the three, this field overlies the smallest portion of Tayinat's lower town. However, it also afforded TLTP an excellent opportunity to extend the survey beyond the presumed limits of the city to confirm its boundary and to assess the distribution of ceramics beyond the projected limits of settlement. The third is a large field to the east of the tell that at the time of survey (June-July 2015) was growing cotton plants. Early in the life cycle of the plant, cotton fields are excellent survey terrain; we surveyed in this field before the cotton grew to ground-obscuring heights. Here, too, survey extended to the north of the presumed location of the city's fortification wall as indicated by CORONA imagery in order to confirm the areal extent of the city.

During our survey of the large cotton field agricultural workers flooded the rows of cotton with water, which subsequently resulted in a 1-2 cm thick layer of sediment present on the ground after the water had sunk or dried. To test whether this flooding had an adverse effect on the quality of the data, we collected 16 test units measuring  $2 \times 2$  m in both the northern and southern portions of the east cotton field, units that were adjacent to those collected prior to the flooding event. A comparison indicates that in the post-flood units there was a slightly higher number of sherds collected with a lower total weight. This would suggest that the flood resulted in a preferential selection of small sherds. Although the impact of flooding must be kept in mind when interpreting the data, the differences between pre- and post-flood data are relatively minor and do not greatly alter the larger conclusions.

## RESULTS

In total, TLTP surveyed 456 units across Tayinat's lower town, plus the 16 additional test units, accounting for just over 4.5 ha of land coverage. Of these, approximately 120 units are located beyond the edge of the ancient city as defined by satellite imagery. Roughly 1.5 ha of the lower town remains unsurveyed; the outer point of the east side of the lower town – including the location of Gateway XI – lies in a fourth field that was not available for survey. The survey recovered a total of 29,667 sherds; this figure includes all sherds from both the  $10 \times 10$  m units from which only diagnostics were kept as well as the smaller  $2 \times 2$  m sub-units from which all sherds were kept regardless of diagnostic status. In addition to these ceramic counts, a total of 304 objects were collected.

The most immediately striking results are provided by the distribution of sherd counts and weights. These are illustrated here using a kernel density extrapolation that calculates the expected figures in the areas between survey units based on the figures provided by the survey units themselves (Fig. 3). It is apparent, first, that the two bodies of data correspond closely to one another. There is no radical difference between the distributions of counts and weights. The one exception is a large area in the northern part of the east field. Here the sherd count is relatively high compared to weight, suggesting the increased collection of small sherds. This area was surveyed following the flooding of the field, and it may be this taphonomic factor that accounts for the difference. The larger pattern in the data, which shows clear similarities between count and density, suggests that the two variables are for the most part interchangeable in this context.

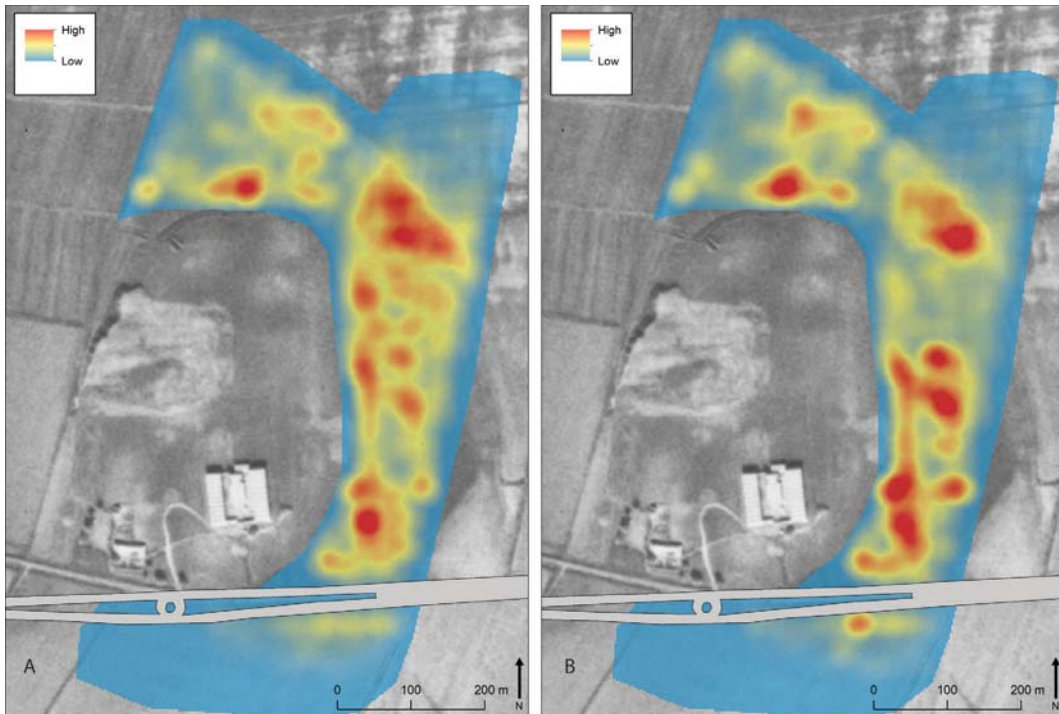


Fig. 3. Extrapolated density maps of ceramics collected by TLTP. *a)* sherds/sq m; *b)* grams/sq m.

Second, it is clear that in both sherd counts and weights there is a striking lack of uniformity across Tayinat's lower town. Clear clusters of density are present to the north, north-east, and east of the acropolis, and likewise there are three major areas – at the northwest corner of the site, a corridor running southwest/northeast from the northeast corner of the tell, and an area in the southern portion of the east field – where it is apparent that very few sherds were collected. In both cases, positive and negative, these distributions of counts and weights very likely correspond to the ancient density of settlement across the city. If that is the case, then TLTP has discovered an intriguing, and perhaps counterintuitive, scenario in which the lower town was occupied unevenly, and was characterized by a number of densely occupied neighborhoods adjacent to large open spaces.

Third, and perhaps most obvious, TLTP's survey has confirmed the areal extent of the city already indicated by CORONA imagery and the preliminary 1999 ceramic survey. In both the southern and northern edges of the site ceramic distribution stopped abruptly along the border of the site as predicted by the imagery. This finding confirms the size of the lower settlement as approximately 16 ha and the total size of Tell Tayinat as roughly 35 ha. It also serves as another indication of the power of CORONA imagery to provide accurate site size data in alluvial environments. Finally, the lack of ceramics beyond the edges of the ancient settlement confirm that the ceramic pieces themselves have not traveled great distances in the intervening millennia, such that their current spatial contexts are highly likely to be closely representative of their original places of use, at least at the moment they entered the archaeological record. (The significance of these findings to our understanding of urbanism in the capital cities of the Syro-Anatolian city-state system is presented in Osborne 2017.)

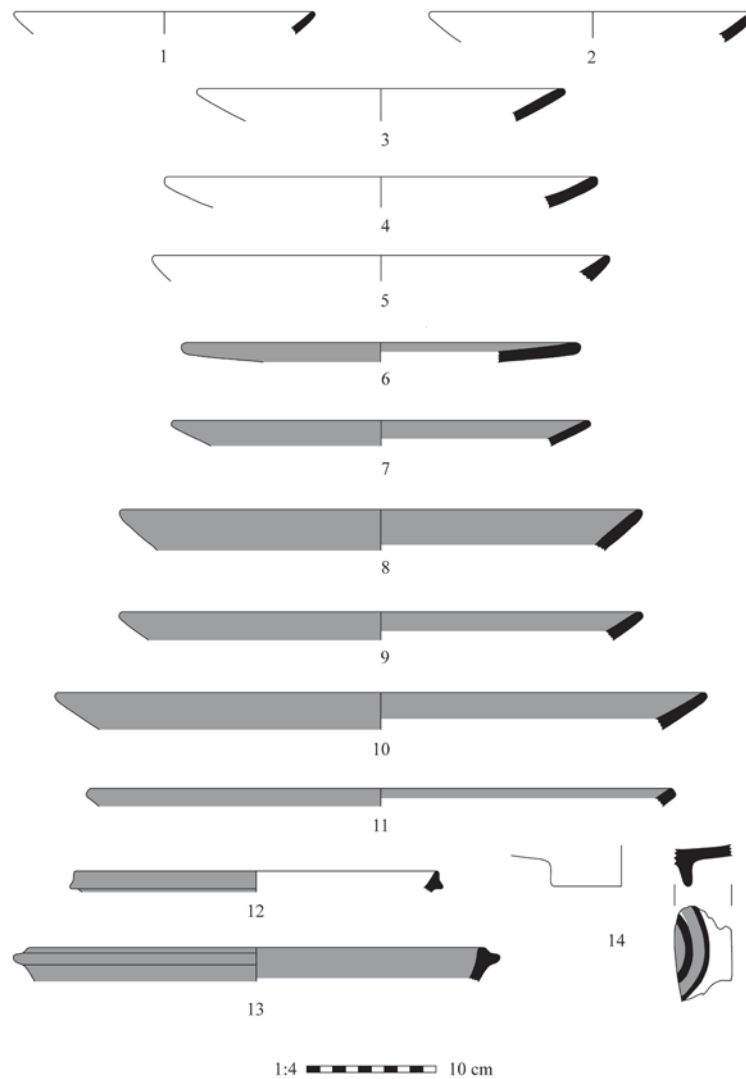


Fig. 4. Platters.

- 1.** AS126.14.H6.99.30, Common Ware platter with rounded rim; **2.** AS126.14.H6.99.27, Common Ware platter with rounded rim; **3.** AS126.15.G7.71.1, Common Ware platter with rounded rim; **4.** AS126.14.J6.39.2, Common Ware platter with rounded rim; **5.** AS126.14.J6.97.28, Common Ware platter with rounded rim; **6.** AS126.14.J7.51.4, Red Slipped Burnished Ware platter with rounded rim; **7.** AS126.15.H7.11.48, Red Slipped Burnished Ware platter with rounded rim; **8.** AS126.14.J6.57.40, Red Slipped Burnished Ware platter with rounded rim; **9.** AS126.14.H6.79.11, Red Slipped Burnished Ware platter with rounded rim; **10.** AS126.14.H7.91.4, Red Slipped Burnished Ware platter with rounded rim; **11.** AS126.14.J6.53.30, Red Slipped Burnished Ware platter with squared rim; **12.** AS126.14.C5.59.38, Red Slipped Burnished Ware platter with flanged rim; **13.** AS126.14.H6.79.6, Red Slipped Burnished Ware platter with flanged rim; **14.** AS126.14.K6.51.22, Local Bichrome Ware platter.



## Ceramics

Excluding ceramics from the test units, which were collected only as a methodological confirmation of the appropriateness of our survey methods both before and after the watering of one of the fields, TLTP produced a total of 9773 diagnostic sherds. 121 of the diagnostic sherds, or 1.2 %, date to the Early Bronze Age III and IV, or late third millennium BCE, and represent a large range of EB wares found at the site to date, including Red Black Burnished Ware, Simple Ware, Painted Simple Ware, Plain Simple Ware, and Smeared Washed Ware (see Braidwood & Braidwood 1960; Welton *et al.* 2011). Of these wares, Simple Ware was the most common, followed by Red Black Burnished Ware; the remainder are represented by a handful of sherds each. It is possible that EB pottery is comparatively rare due to its far greater depth under the alluvium (see *Spatial Distribution* below). A further 74 sherds are Roman in date, and likely derive from an unexcavated Roman period villa located 200 m north of the lower town. Finally, 19 sherds are possibly from the second millennium, or the Middle and Late Bronze Age, though none of these were highly diagnostic of those periods.

The remaining diagnostic sherds, over 97 % of the assemblage, derive from the early first millennium BCE. Individual sherds were assigned a type according to a ceramic typology developed from the Iron Age II and III levels of the Syrian-Hittite Expedition excavations on the tell, Building Periods 2-5 (Osborne in press). Although a small number of the Iron Age II-III types present on the tell were not found by TLTP, these types absent from the lower town are almost exclusively variants of decorated or imported wares that are exceptions to, rather than representative of, the larger repertoire. The total assemblage collected by TLTP, then, contains almost the full repertoire of forms found on the mound itself, including imports.

### *Iron Age II and III Ceramic Wares*

Common Ware, here defined as locally produced, wheel made, and undecorated pottery, represents 70 % of the diagnostic sherds collected by TLTP. Common Ware is attested in all of the shapes described below, and consists of a pink-beige fabric with black and white inclusions that is typically, though not always, thoroughly oxidized across the profile. The most common form is the platter. Common Painted Ware is made from an identical fabric, but here the vessels have a surface treatment consisting of painted bands in red, brown, or black. These sherds are comparatively rare in the TLTP assemblage ( $n = 96$ ), and are likely a derivative of the Iron Age I period during which painted pottery was far more pervasive, such as the locally produced Mycenaean IIIC vessels. Common Painted Ware is also found in a more restricted range of forms, limited only to platters, bowls, kraters, and jar rims. In the TLTP collection, they are mostly present as painted body sherds.

At 21 % of the assemblage surveyed by TLTP, Red Slipped Burnished Ware (RSBW) is the second most frequently occurring ware. As has long been established in the archaeology of the northern Levant and southeast Anatolia, RSBW is the ceramic hallmark of the early first millennium, though its precise start and end dates remain difficult to pinpoint (Mazzoni 2000a; 2000b: 42). RSBW is essentially the same fabric as Common Ware – typically well oxidized, pink-beige in color, and with black and white inclusions – but differs in surface treatment, which consists of a red slip that is either hand or wheel burnished. The nature of the burnishing – specifically that it was first performed by hand and only later by wheel, and that

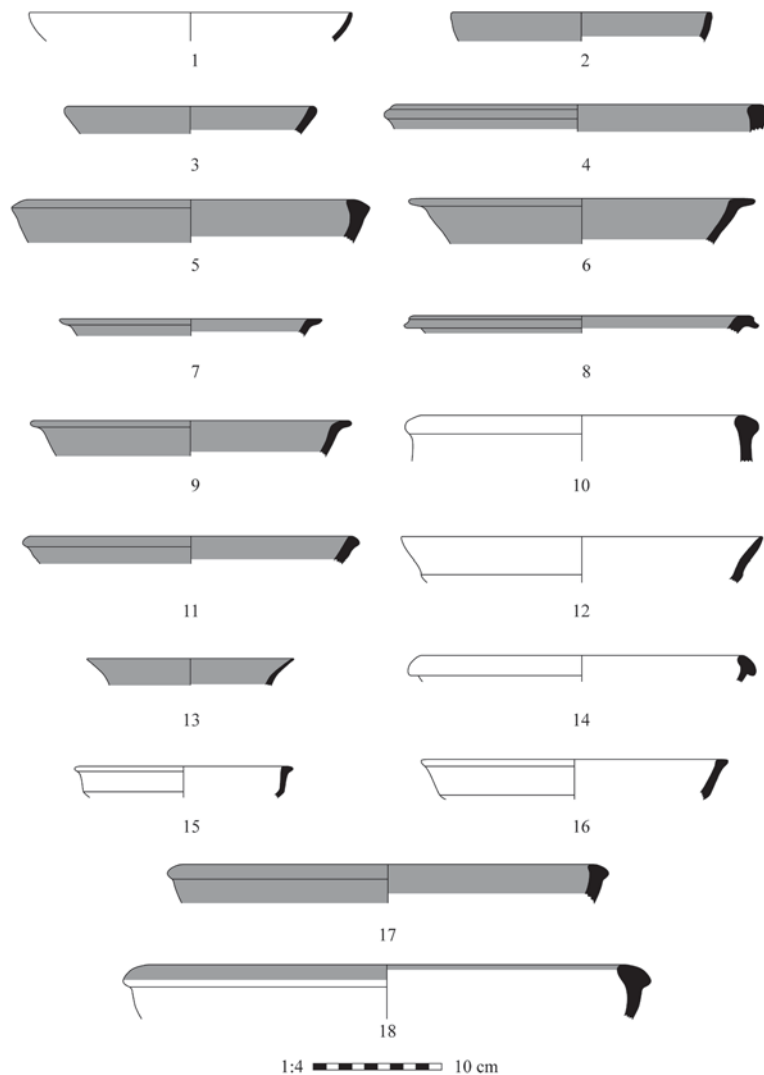


Fig. 5. Bowls.

1. AS126.14.K6.57.17, Common Ware rounded bowl; 2. AS126.14.J7.91.10, Red Slipped Burnished Ware rounded bowl; 3. AS126.14.J6.95.35, Red Slipped Burnished Ware rounded bowl; 4. AS126.14.H6.79.12, Red Slipped Burnished Ware rounded bowl with inverted rim; 5. AS126.14.K6.51.43, Red Slipped Burnished Ware rounded bowl with beveled rim; 6. AS126.15.H7.73.37, Red Slipped Burnished Ware bowl with everted, flattened rim; 7. AS126.15.E6.79.25, Red Slipped Burnished Ware bowl with everted, flattened rim; 8. AS126.15.E7.13.13, Red Slipped Burnished Ware bowl with everted, drooping rim; 9. AS126.14.C5.59.19, Red Slipped Burnished Ware bowl with everted, angled rim; 10. AS126.14.G6.59.29, Common Ware bowl with everted, thickened rim; 11. AS126.14.D6.15.14, Red Slipped Burnished Ware bowl with everted, thickened rim; 12. AS126.15.H7.75.37, Common Ware carinated bowl; 13. AS126.14.D5.75.36, Red Slipped Burnished Ware carinated bowl; 14. AS126.15.G6.77.33, Common Ware bowl with ovular rim; 15. AS126.15.G6.77.19, Common Ware bowl with flat, pointed rim; 16. AS126.15.J6.71.37, Common Ware bowl with flat, pointed rim; 17. AS126.15.H7.11.40, Red Slipped Burnished Ware bowl with ovular rim; 18. AS126.14.G6.59.2, Red Slipped Burnished Ware bowl with large, ovular rim.

over time it became more complete over the surface of the vessel – has long been thought to be a chronologically significant distinction (Swift 1958), though this has not yet been demonstrated stratigraphically. Both hand and wheel burnishing is present in the collection. RSBW is primarily found on open vessels, especially platters and all of the many varieties of bowl forms, including basins. It is less frequently present on jugs and juglets, themselves a rare form in the ceramics of this period. An exotic version of RSBW consists of Local Bichrome Ware, again comprised of the same local fabric, and also slipped and burnished, but in this case the slip is beige in color (i.e., the slip matrix uses the same clay as the fabric itself) and is painted in alternating red and brown bands. Local Bichrome Ware was determined on the main mound to have been extremely rare and therefore an elite category of ceramics (Osborne in press-b); this is confirmed by the lower town collection, in which only five specimens exist.

Far less frequent, but nevertheless present in several places across the lower town, were the same range of imported wares that have been excavated in the tell: Cypriot White Painted, Bichrome, and Black-on-Red Wares; Aegean geometric pottery, especially including the pendent semicircle skyphos imported from Euboea or the Cyclades; and Assyrian stamped pottery, Glazed Ware, and perhaps two pieces of Assyrian Palace Ware, which cannot be identified with certainty. These imported sherds will be described in more detail in the following section.

In terms of absolute chronology for the ceramics, the available stratigraphic evidence permits only a broad dating to the early centuries of the first millennium BCE. Especially difficult is relating the ceramic assemblage to the arrival of the Assyrians, and imported pottery is of little help in answering such a restricted question. The small number of Assyrian sherds, as well as specific forms like the shallow bowl with pointed rims, are commonly found in the Neo-Assyrian heartland and may have been introduced to Tayinat following Tiglath-pileser III's conquest in 738 BCE, i.e., the late 8<sup>th</sup> and 7<sup>th</sup> centuries. These hardly suffice to date the entire lower town occupation to the Assyrian period, however. As mentioned above, allegedly early hand burnished RSBW platters are present and, as will be illustrated below, are also spatially concentrated, possibly indicating that lower town occupation began early in the Iron Age II. In addition, Syro-Anatolian statuary fragments (see below) must likewise belong to a pre-Assyrian context. It seems highly probable, therefore, that settlement in the lower town of Tell Tayinat was present for something approaching the full range of the Iron Age II and III, including at least parts, but possibly all, of the 9<sup>th</sup>, 8<sup>th</sup>, and 7<sup>th</sup> centuries.

### *Types*

The most common form in the Iron Age II/III repertoire is the open platter (Fig. 4). These are present in varying quantities in nearly every unit collected by the TLTP survey and occur in both Common Ware and Red Slipped Burnished Ware. Rim diameters typically cluster between 25 and 30 cm, but can also reach ranges upward of 45 cm. These vessels are likely used for the consumption of food, and it may be that these larger diameters are indicative of commensal use. The lip is most often rounded, but a squared variety also exists; the former is usually wheel burnished and red-orange in color while the latter is more frequently associated with hand burnishing and tends to be closer to purple. Both Common Ware and Red Slipped Burnished Ware platters have parallels at a number of sites in or near the north Orontes watershed, such as Tell Abou Danné, 'Ain Dara, Tell 'Acharneh, Tell Afis, and Tell Qarqur (Lebeau 1983: Pls. II: 1-5, III: 4-8, V: 1-6; Stone

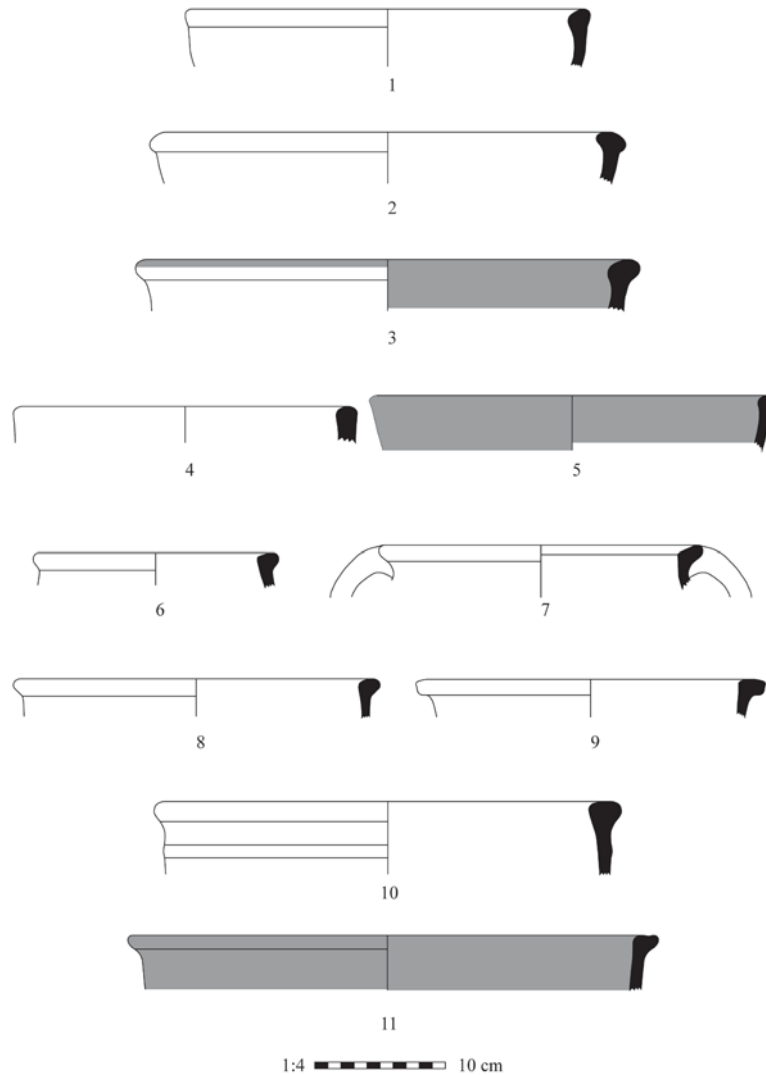


Fig. 6. Basins and kraters.

**1.** AS126.14.K5.51.4, Common Ware basin; **2.** AS126.15.G7.15.11, Common Ware basin; **3.** AS126.14.D5.31.7, Red Slipped Burnished Ware basin; **4.** AS126.14.J6.59.12, Common Ware basin with vertical walls; **5.** AS126.15.G7.15.26, Red Slipped Burnished Ware basin with vertical walls; **6.** AS126.14.G6.99.8, Common Ware krater with outwardly curved, rounded rim; **7.** AS126.14.D5.77.4, Common Ware krater with outwardly curved, rounded rim; **8.** AS126.14.J6.57.11, Common Ware krater with outwardly curved, rounded rim; **9.** AS126.14.D5.73.17, Common Ware krater with squared rim; **10.** AS126.15.G7.71.13, Common Ware krater with squared rim and ridged collar; **11.** AS126.14.K5.93.1, Red Slipped Burnished Ware with grooved rim.

& Zimansky 1999: Fig. 74: 1; Cooper 2006: Figs. 2: 1-5, 5: 6-14, 7: 1-6, 8: 4-7; Dornemann 2003: Fig. 81: 1-9). A much rarer variety has a vertically flanged rim that is either ridged or pinched (Fig. 4: 12-13). Both of these platter types – the common straight rim versions as well as the flanged rim variety – are attested with single examples in Local Bichrome Ware (Fig. 4: 14).



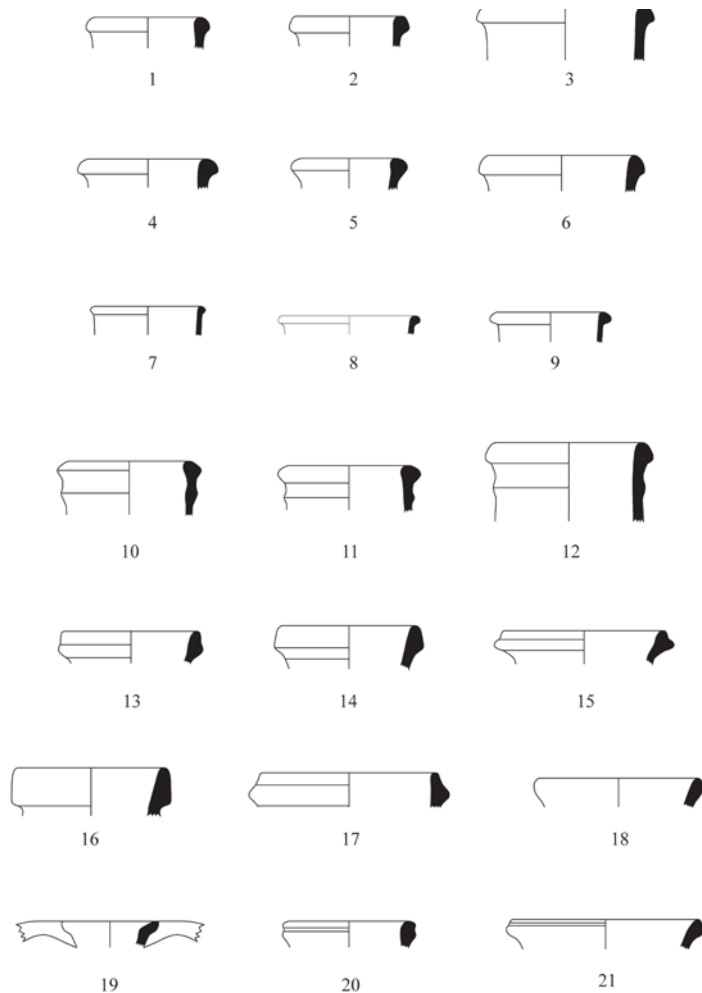
The form with the most diverse typology is the bowl, for which there are over two dozen varieties (Fig. 5). These include simple rounded bowls, bowls with flattened or everted rims, rims with exterior thickening or a ridge, carinated bowls, and the frequent shallow bowls with flat pointed rims. Like the platters, this diversity is well represented in both Common and RSBW and in this case there are also a handful of examples in Common Painted Ware. Also like the platters these bowl forms, in both Common Ware and RSBW, are well represented at local sites in the region. A significant divergence from this pattern is the shallow bowl with flat pointed rims (Fig. 5: 15-16), which have a number of parallels at Assyrian or Assyrian-period sites such as Tell Ahmar, Tell Sheikh Hamad, and Fort Shalmaneser (Jamieson 2000: Figs. 2: 15, 3: 4; Oates 1959: Pl. XXXV: 2-3; Kreppner 2006: Taf. 48: 2-3).

Large deep bowls, or basins, are another common form across much of the lower town. The most common variety has rim diameters between 35 and 40 cm, a curved profile, and thickened ovular rims, often at an everted angle. When preserved, vertical loop handles connect the rim to the shoulder (Fig. 6: 1-3). These basins, like the bowls, are attested at nearby sites such as Tell Abou Danné and Tell Afis, and are found in both Common Ware and RSBW; the latter are typically slipped and burnished on the rim and shoulder only. A less common variety of basin includes tall, vertical vessels with thickened rims (Fig. 6: 4-5).

Kraters, or deep basins with slightly concave profiles come in three major forms. The first have outwardly curving rims with round lips (Fig. 6: 6-8); the second have rims with a rectangular or squared profile and often, though not always, a ridged collar that extends around the bottom of the shoulder (Fig. 6: 9-10); the third have grooved rims (Fig. 6: 11). All three of these types are present in Common Ware, and the first two are also infrequently attested in Common Painted Ware. All are paralleled in the same range of sites in the region.

Several distinct types of jars are present in the TLTP assemblage. By far the most common ( $n = 457$ ) are characterized by straight necks with a vertical stance and a thickened exterior rim profile (Fig. 7: 1-6). Occasionally a ridged collar is present where the neck meets the shoulder of the vessel. Rim diameters consistently cluster around 10 cm. A very similar sub-type has the same stance but a much thinner profile with a beaded rim instead of a thickened exterior (Fig. 7: 7-9). The second most frequent profile is the ridge-necked jar ( $n = 129$ ) (Fig. 7: 10-12). Its rim is curved and thickened, but the most diagnostic trait is the ridge roughly halfway up the neck. Where preserved, a vertical loop handle connects the shoulder to the neck where the ridge is located. Slightly less common than the sub-types just mentioned are jars with thick necks and triangular rim profiles ( $n = 88$ ) (Fig. 7: 13-17). Least common of all are the rims of torpedo jars with broad shoulders ( $n = 6$ ). The fabric of these vessels, unlike the Common Ware that typifies the other jar types, is bright orange in color. Only the rims are preserved, such that the chronologically sensitive profile of the body is not available. Whereas the bulk of the jar types are paralleled in the typical sites of the north Orontes watershed, these vessels are attested at coastal sites such as Al Mina and Tyre (Lehmann 2005: Fig. 9: 1; Bikai 1978: Pl. XXI: 1, 5).

Compared with the forms listed above, jugs and juglets are relatively uncommon in the TLTP collection. Common Ware pitchers with everted, likely trefoil, rims and loop handles connecting the rim to the shoulder are rare; slightly more frequent are their RSBW counterparts ( $n = 45$ ), sometimes with double loop handles (Fig. 7: 18-19). RSBW strainer jugs are



1:4 10 cm

Figure 7. Jars and jugs.

**1.** AS126.15.F6.95.16, Common Ware jar with straight neck and thickened rim; **2.** AS126.14.K6.59.21, Common Ware jar with straight neck and thickened rim; **3.** AS126.14.K5.59.13, Common Ware jar with straight neck and thickened rim; **4.** AS126.14.J6.19.22, Common Ware jar with straight neck and thickened rim; **5.** AS126.14.G6.59.11, Common Ware jar with straight neck and thickened rim; **6.** AS126.14.C5.53.18, Common Ware jar with straight neck and thickened rim; **7.** AS126.14.H6.99.19, Common Ware jar with thin profile and beaded rim; **8.** AS126.15.F6.95.15, Common Ware jar with thin profile and beaded rim; **9.** AS126.15.H7.11.7, Common Ware jar with thin profile and beaded rim; **10.** AS126.14.K3.91.1, Common Ware ridge-necked jar; **11.** AS126.14.G6.79.23, Common Ware ridge-necked jar; **12.** AS126.14.D6.73.19, Common Ware ridge-necked jar; **13.** AS126.15.J6.15.17, Common Ware jar with triangular rim; **14.** AS126.14.K6.57.4, Common Ware jar with triangular rim; **15.** AS126.14.D5.73.19, Common Ware jar with triangular rim; **16.** AS126.15.G7.71.15, Common Ware jar with triangular rim; **17.** AS126.14.H6.19.2, Common Ware jar with triangular rim; **18.** AS126.14.D5.37.4, Common Ware jug; **19.** AS126.15.G7.91.22, Common Ware jug with double loop handles; **20.** AS126.15.H6.17.16, Common Ware jug with compound rim; **21.** AS126.14.C5.53.15, Common Ware jug with compound rim.

rare ( $n = 10$ ), but partially this is because they cannot be identified at the rim such that several of the pitchers likely belong to this category. Instead, they are identified either by the preservation of part of their spout or by a body sherd of the strainer itself, located where the spout meets the body of the jug. Common Ware jugs with a compound rim (Fig. 7: 20-12) are, like all of these forms, found at neighboring sites like Tell Afis and Tell Mastuma (Iwasaki *et al.* 2009). Even rarer than the jugs are juglets, with Common Ware ( $n = 25$ ) and Red Slipped Burnished Ware ( $n = 5$ ) versions both appearing too infrequently to form morphological types.

There are two primary categories of cooking pots in the TLTP collection, both of which are characterized by fabrics that are different from both the locally produced wares (Common Ware, Common Painted Ware, Red Slipped Burnished Ware, and Local Bichrome Ware) as well as any of the imports. The most frequent type ( $n = 346$ ) is perhaps the same basic matrix as the local clay recipe, including the self-slip that is frequently applied, but is heavily tempered with crushed shell. Its rim is thickened on the exterior or rolled outward and, if present, is connected to the shoulder by means of a loop handle. Two size categories are present, one whose rim diameters range between 10 and 15 cm, and a larger variety with rim diameters typically falling between 16 and 25 cm, though larger examples exist (Fig. 8: 1-7). A less common ( $n = 73$ ) and entirely different cooking pot has gray-black fabric and high quantities of shiny stone, likely steatite, temper (Birney 2008). These are holemouth vessels with pointed, triangular rims, wide, thin strap handles that begin just below the rim, and the occasional applique design around the shoulder (Fig. 8: 8-12). These, too, have two main size categories, clustering between 10 and 15 cm, and 18 to 25 cm. Despite the fact that their fabrics are highly different both from one another and from the other wares present at Tayinat, both cooking pot types are commonly found at the neighboring sites of Tell Afis, Tell Qarqur, Tell Mastuma, and Tell 'Acharneh.

Storage jars come in two primary forms and fabrics. The first, and most common ( $n = 257$ ), is the typical storage jar of the northern Levant and southeastern Anatolia at the time, the pithos with a rounded and thickened rim profile that varies in the length of its ovular shape. The fabric is macroscopically identical with that of the local wares, though voids in the clay are more prominent. Rim diameters range greatly, but cluster around 40 cm (Fig. 9: 1-3). A sub-type of this class of storage jar has a flattened rim and more vertical stance, and may in fact belong to a different functional vessel such as 'bathtub' vessels. Both are common in the region (Fig. 9: 4). A second storage jar ( $n = 76$ ) has a very different fabric that is the usual pink-beige on the surface but with a blue-grey core and metallic texture that is highly fired with few inclusions. It lacks the large thickened oval on the rim, and its stance is so inverted that it almost appears like a holemouth jar (Fig. 9: 5-7).

Pot stands into which jars of various sizes could be inserted were common ( $n = 62$ ). Because their rim profiles resemble other forms, making their identification a challenge without substantial preservation, it is possible that small rim fragments were misrecognized as other vessels. Pot stands are made with the typical local fabric, and come in smaller (Fig. 10: 1) and larger (Fig. 10: 2-4) varieties depending on function. Parallels in this case are present both in local regional sites like Tell Abou Danné and Tell 'Acharneh, as well as Assyrian sites such as Tell Sheikh Hamad and Khorsabad (Loud and Altman 1938: Pl. 63: 251).

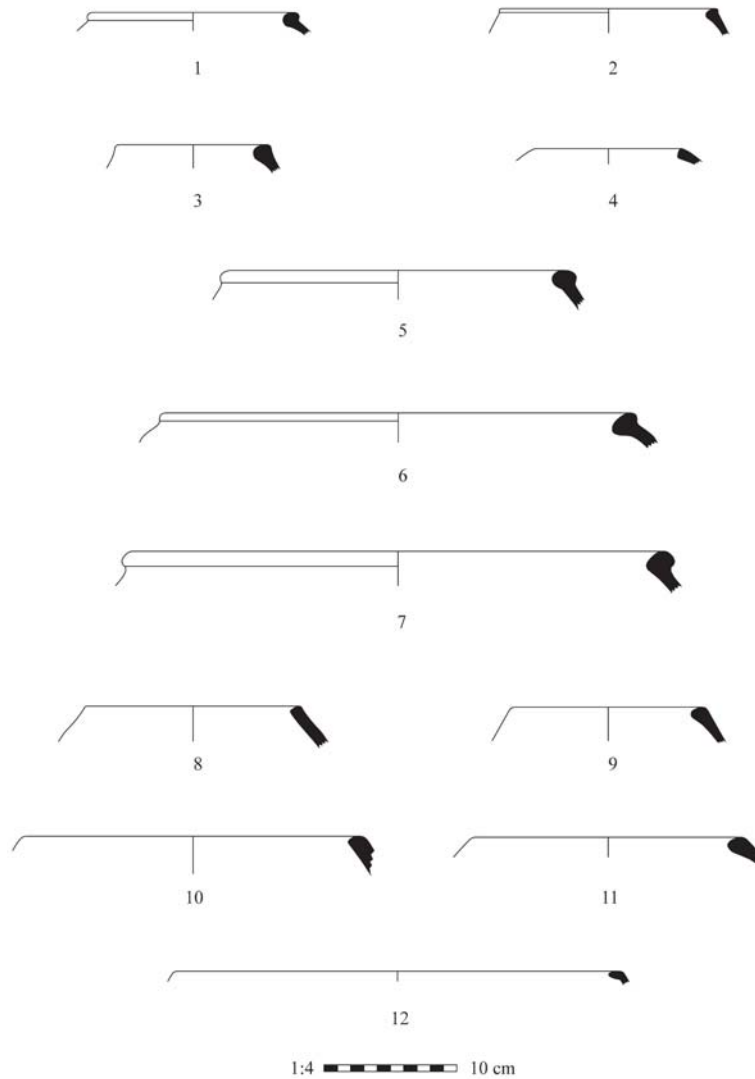


Figure 8. Cooking pots.

1. AS126.14.J6.93.23, Shell temper cooking pot; 2. AS126.15.D6.99.32, Shell temper cooking pot; 3. AS126.14.H6.19.15, Shell temper cooking pot; 4. AS126.14.H6.99.29, Shell temper cooking pot; 5. AS126.14.H6.99.3, Shell temper cooking pot; 6. AS126.14.J7.91.4, Shell temper cooking pot; 7. AS126.14.K6.79.1, Shell temper cooking pot; 8. AS126.14.D5.77.3, Stone temper cooking pot; 9. AS126.14.K6.51.9, Stone temper cooking pot; 10. AS126.14.J6.59.8, Stone temper cooking pot; 11. AS126.14.H7.91.31, Stone temper cooking pot; 12. AS126.15.E6.79.24, Stone temper cooking pot.

The largest category of Iron Age II and III imported ceramics – or at least ceramics that are macroscopically identified as imports – are classified here as Cypriot pottery, with the understanding that some pieces may actually have been produced in Cilicia or the Amuq. It is difficult to date individual sherds to specific divisions of Cypriot pottery chronologies, but



provisionally they appear to belong mainly to the Cypro-Geometric III (ca. 850-700 BCE) and less so to the Cypro-Archaic I (ca. 700-600 BCE) periods (Gjerstad 1948; Birmingham 1963; Schreiber 2003; Iakovou 2004). As listed above, the stylistic groups include White Painted III-IV ( $n = 48$ ), Bichrome III-IV ( $n = 6$ ) – though of course several of the ‘White Painted’ sherds might actually derive from Bichrome vessels – and Black-on-Red I(III)-II(IV) ( $n = 6$ ). The White Painted pieces are predominantly body sherds that cannot be assigned to a specific form; where rims are preserved it is possible to identify vertical sided bowls (Fig. 10: 6), barrel jugs, juglets and an amphora (Fig. 10: 8). The same applies to the Bichrome sherds, for which two vertical sided bowls and one juglet (Fig. 10: 7) are attested. The few Black-on-Red sherds are typical of that tradition: red, oxidized, and highly levigated fabric with a polished red slip onto which are painted thin and well-executed black bands and compass-drawn concentric circles. Besides one ambiguous body sherd, the TLTP corpus consists of two rounded bowls and three juglets.

Sherds of Aegean Middle-Late Geometric pottery ( $n = 18$ ) are exclusively bowls for the nine sherds where rims were preserved. Of these, six are the pendent semicircle skyphos imported from Euboea or the Cyclades, with its characteristic sharp carination where the rim meets the body, a band of reserved paint along the rim interior, and painted pendent semicircles in a reserved space between two horizontal handles (Fig. 10: 9-11) (Kearsley 1989). This is quite a high quantity of Aegean ceramics considering that they derive from the surface of the site, and that most Levantine sites hardly produce these numbers through excavation.

Finally, the TLTP assemblage contains a handful of pieces imported from Assyria including Assyrian stamped pottery ( $n = 6$ ) (Fig. 10: 12-13), glazed ware ( $n = 1$ ), and perhaps two pieces of Assyrian Palace Ware, although the latter cannot be identified with certainty.

### *Spatial Distributions*

The general spatial distribution of ceramic counts and weights was described above: instead of an even spread, it is clear that ceramics are clustered in certain sectors of Tayinat's lower town (see Fig. 3 above). Chronologically, one of the most interesting features is the persistent presence of Early Bronze Age pottery across the lower town, despite their low frequency in absolute terms (Fig. 11a). EB pottery appears in 93 of the collection units spread fairly evenly across the TLTP survey universe, including locations that are 150 m beyond the main tell. Although the numbers are small, perhaps explained by the great depth of EB occupation under the alluvium, this finding increases the likelihood that actual EB settlement exists in the lower town, as already suspected from coring results (Welton *et al.* 2011: 153). The earliest Iron Age occupation in the lower town appears to be early in the Iron Age II sequence. This is tentatively suggested by the presence of purplish platters with squared lips, which are thought to be the earliest RSBW vessels (Swift 1958), though this remains far from uncertain. If that is the case, it is interesting to note that these squared platters cluster just beyond the north and northeast sides of the tell (Fig. 11b), possibly indicating that the lower town expanded over time from this area.

As described elsewhere (Osborne 2017), the stronger clustering of RSBW platters in comparison with Common Ware platters points toward some degree of differentiation in wealth, given the assumed greater worth of RSBW vessels over Common Ware vessels in light

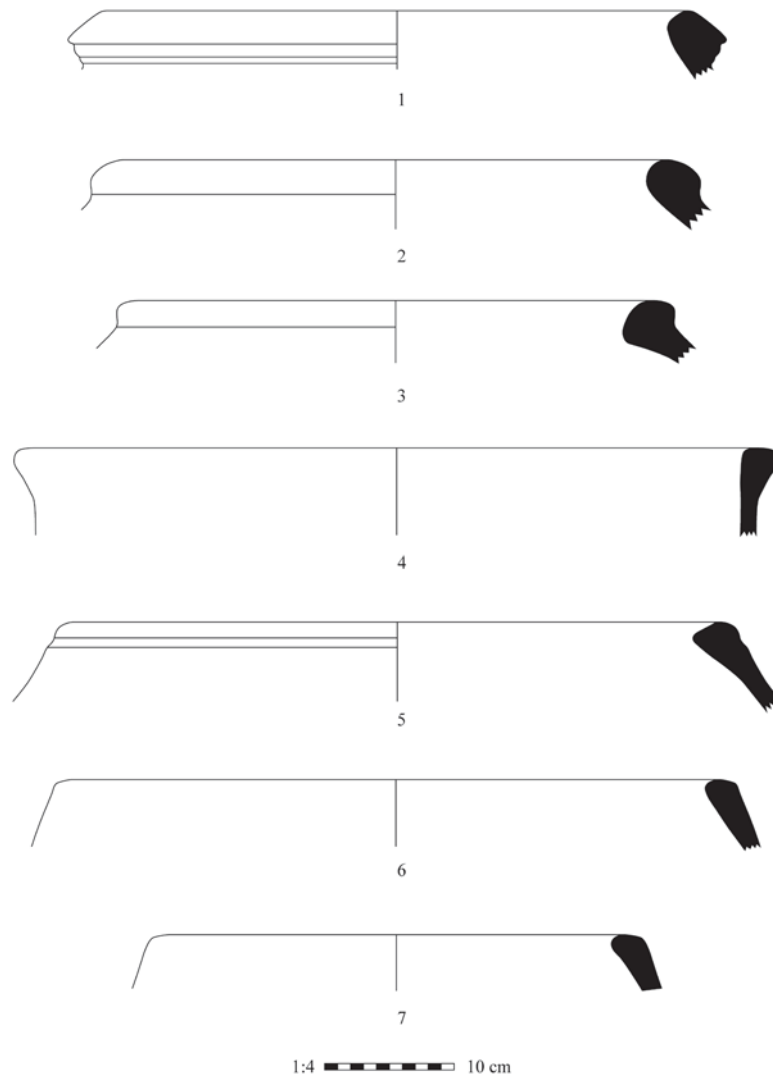


Figure 9. Storage jars.

**1.** AS126.14.D6.35.1, Common Ware storage jar with rounded rim; **2.** AS126.15.G6.77.48, Common Ware storage jar with rounded rim; **3.** AS126.14.G6.39.27, Common Ware storage jar with rounded rim; **4.** AS126.14.G6.79.28, Common Ware storage jar with flattened rim; **5.** AS126.14.G6.39.37, storage jar with metallic fabric; **6.** AS126.14.H6.59.25, storage jar with metallic fabric; **7.** AS126.14.J6.95.11, storage jar with metallic fabric.

of the increased amount of time and energy required to produce them. That this is a plausible scenario is supported by the fact that at least one of these clusters, located at the northeast edge of the lower settlement by the city wall, corresponds to a clear concentration of Bichrome and White Painted sherds likely imported from Cyprus (Fig. 12).

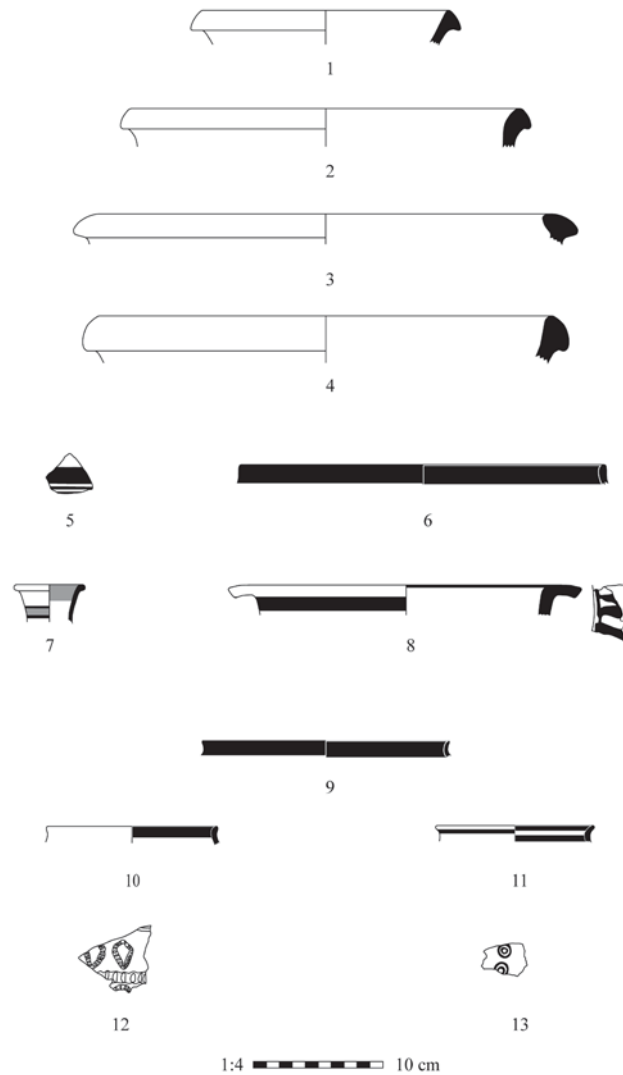


Figure 10. Pot stands and imported pottery.

**1.** AS126.15.F7.95.4, Common Ware pot stand; **2.** AS126.14.H6.79.5, Common Ware pot stand; **3.** AS126.15.J6.71.42, Common Ware pot stand; **4.** AS126.14.J7.31.1, Common Ware pot stand; **5.** AS126.14.G6.99.16, White Painted Ware body sherd; **6.** AS126.14.D5.57.27, White Painted Ware vertical sided bowl; **7.** AS126.14.D5.99.59, Cypriot Bichrome Ware juglet; **8.** AS126.15.E7.35.50, White Painted Ware amphora; **9.** AS126.14.C4.97.25, Aegean Middle-Late Geometric skyphos; **10.** AS126.14.K5.75.2, Aegean Middle-Late Geometric skyphos; **11.** AS126.14.G6.39.53, Aegean Middle-Late Geometric skyphos; **12.** AS126.14.D6.37.2, Assyrian stamped body sherd; **13.** AS126.14.G6.59.17, Assyrian stamped body sherd.

For the most part, the frequency of specific forms across the lower town aligns with the quantities of ceramics that were collected. This is to be expected: more vessels of a given shape will be present where more pottery was found. Most types' spatial distribution densities thus line up with Fig. 3, which extrapolates the density of all the ceramics across the site. There are a couple of interesting exceptions to this pattern, however. One is with bowls, for which there is an amazing range of forms for this period. Compared with the general distribution of bowls, Red Slipped Burnished Ware bowls with thickened exterior rims (Fig. 5: 11) concentrate distinctly in the southeastern quarter of the lower town (Fig. 13). The same distribution appears with basins (Fig. 6: 1-5), which are also more common in the southeast (Fig. 13c). Similarly, the concentration of jars and jugs that is noticeable in the center of the east field just east of the tell (Fig. 14a) appears to be partially driven by a similar concentration of ridged-necked jars specifically (Fig. 14b), and not by the more common straight-necked jars with thickened rims, which are ubiquitous wherever pottery was found (Fig. 14c). The explanations for these concentrations of specific forms is unclear, and perhaps cannot be found until excavation takes place in these areas.

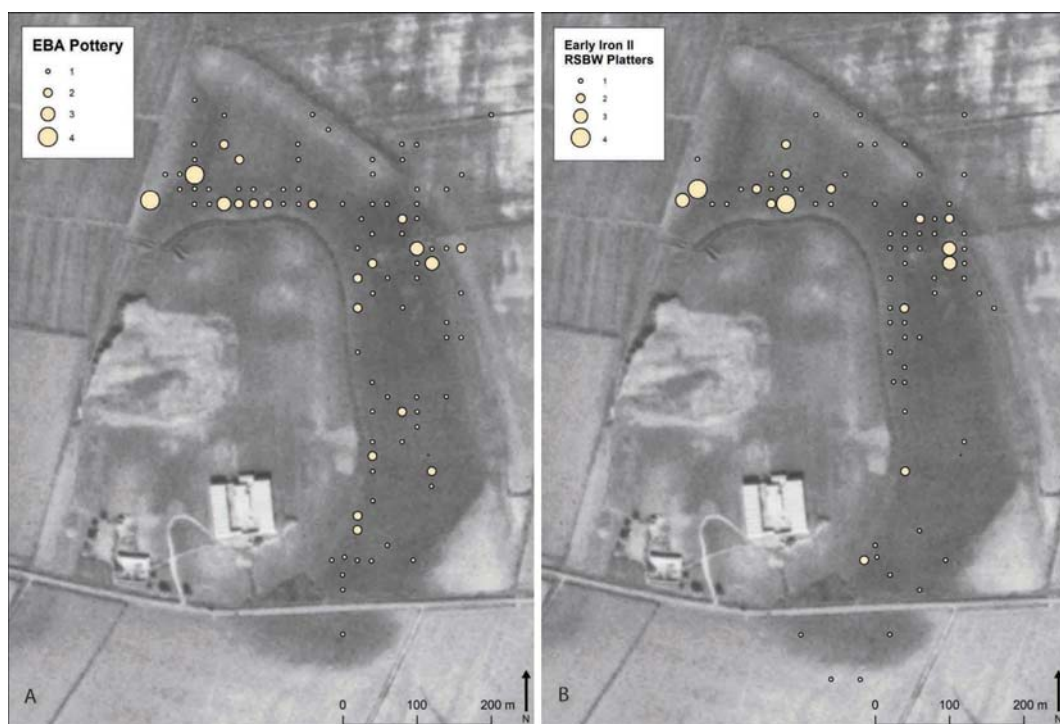


Fig. 11. Distributions of pre-Iron II/III phases in the lower town.  
*a)* Early Bronze Age III and IV pottery; *b)* Early Iron II Red Slipped Burnished Ware platters.



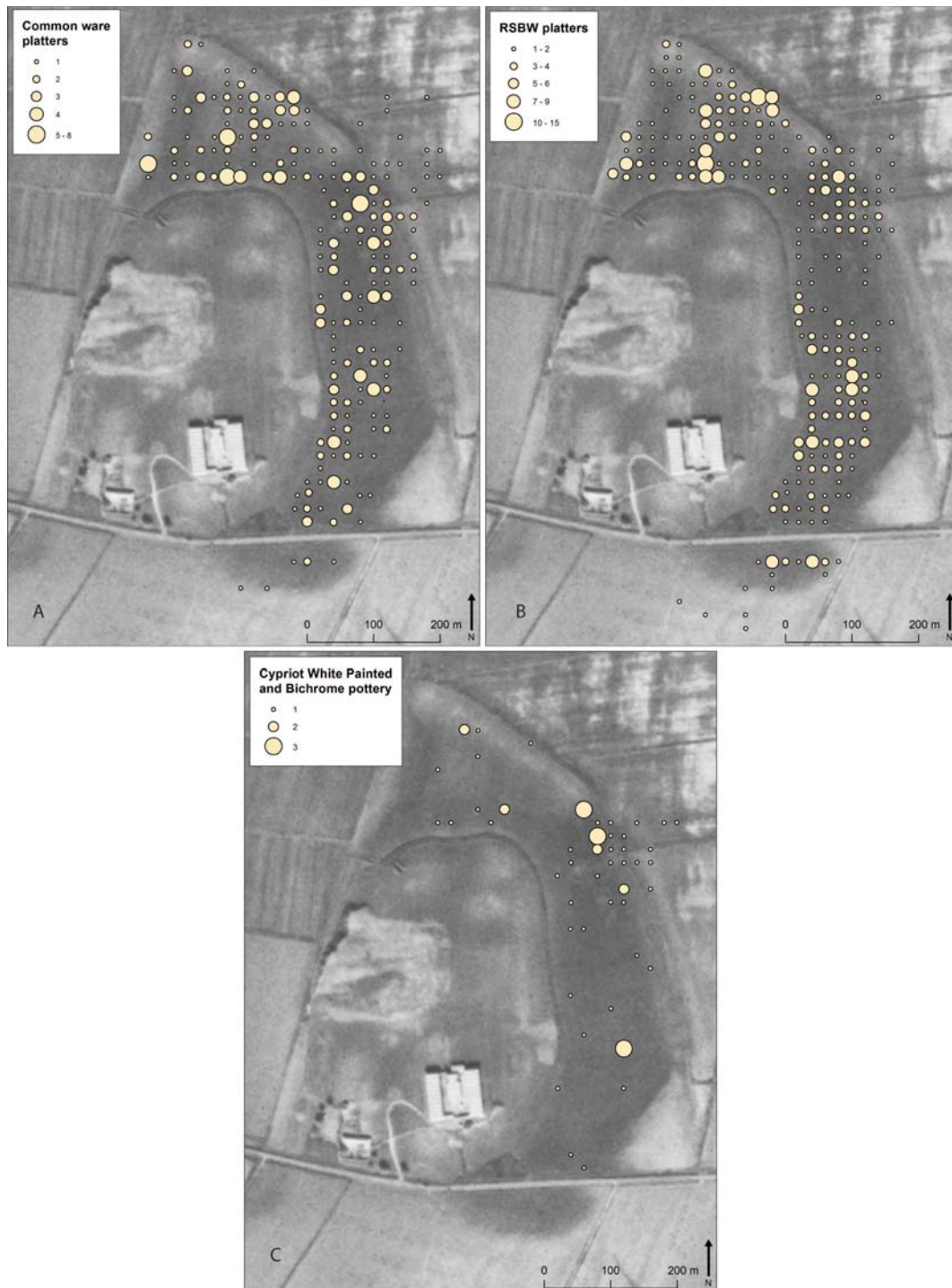


Fig. 12. *a*) Distribution of Common Ware platters; *b*) distribution of Red Slipped Burnished Ware platters; *c*) distribution of Cypriot White Painted and Bichrome wares. Note the concentration of Red Slipped Burnished Ware and Cypriot sherds in the same neighborhood of the northeastern lower town.

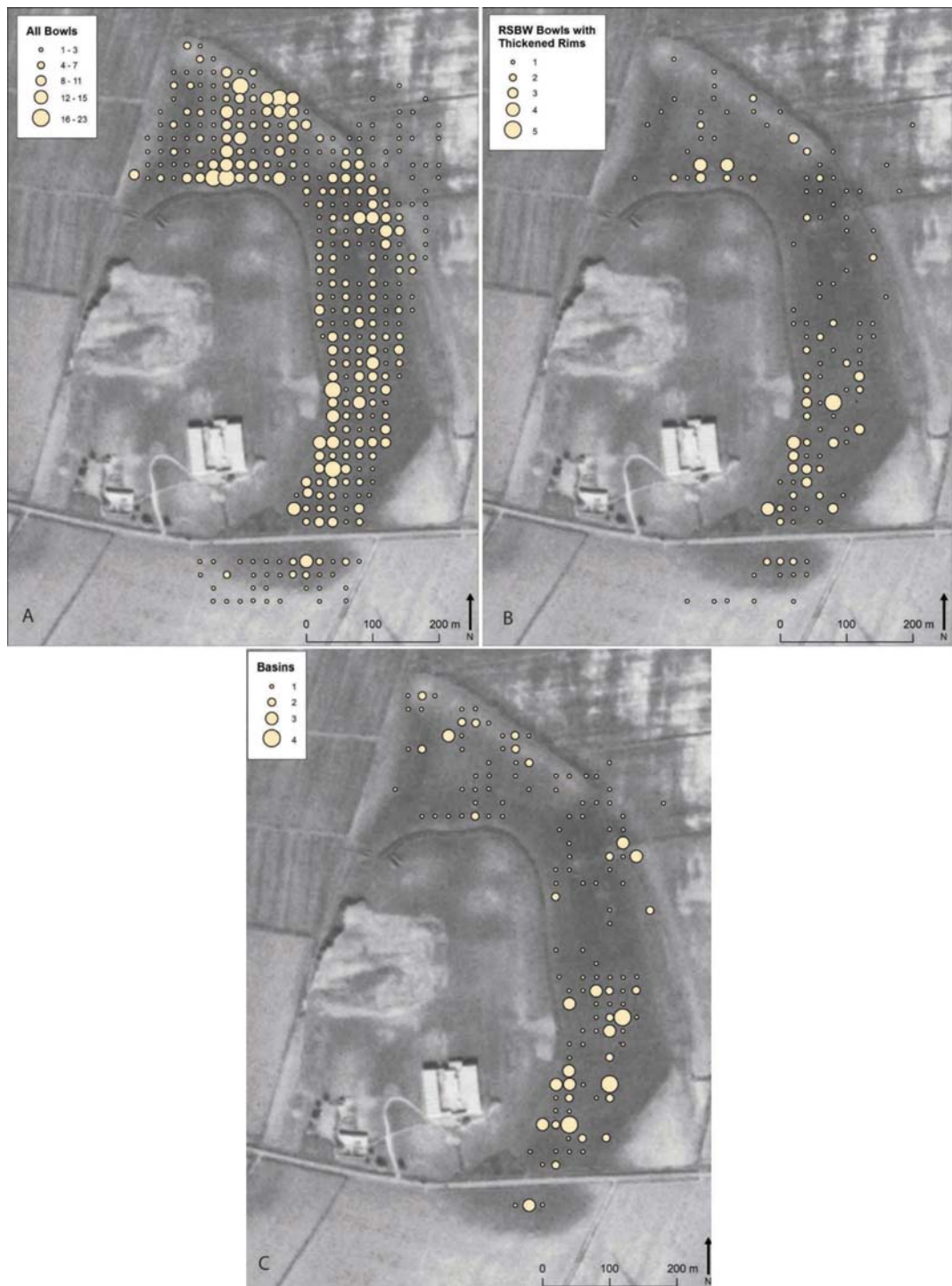


Fig. 13. *a*) Distribution of all bowls across the lower town; *b*) distribution of bowls with thickened exterior rims; *c*) distribution of basins. Note the concentration of bowls with thickened exterior rims and basins in the southeastern lower town.

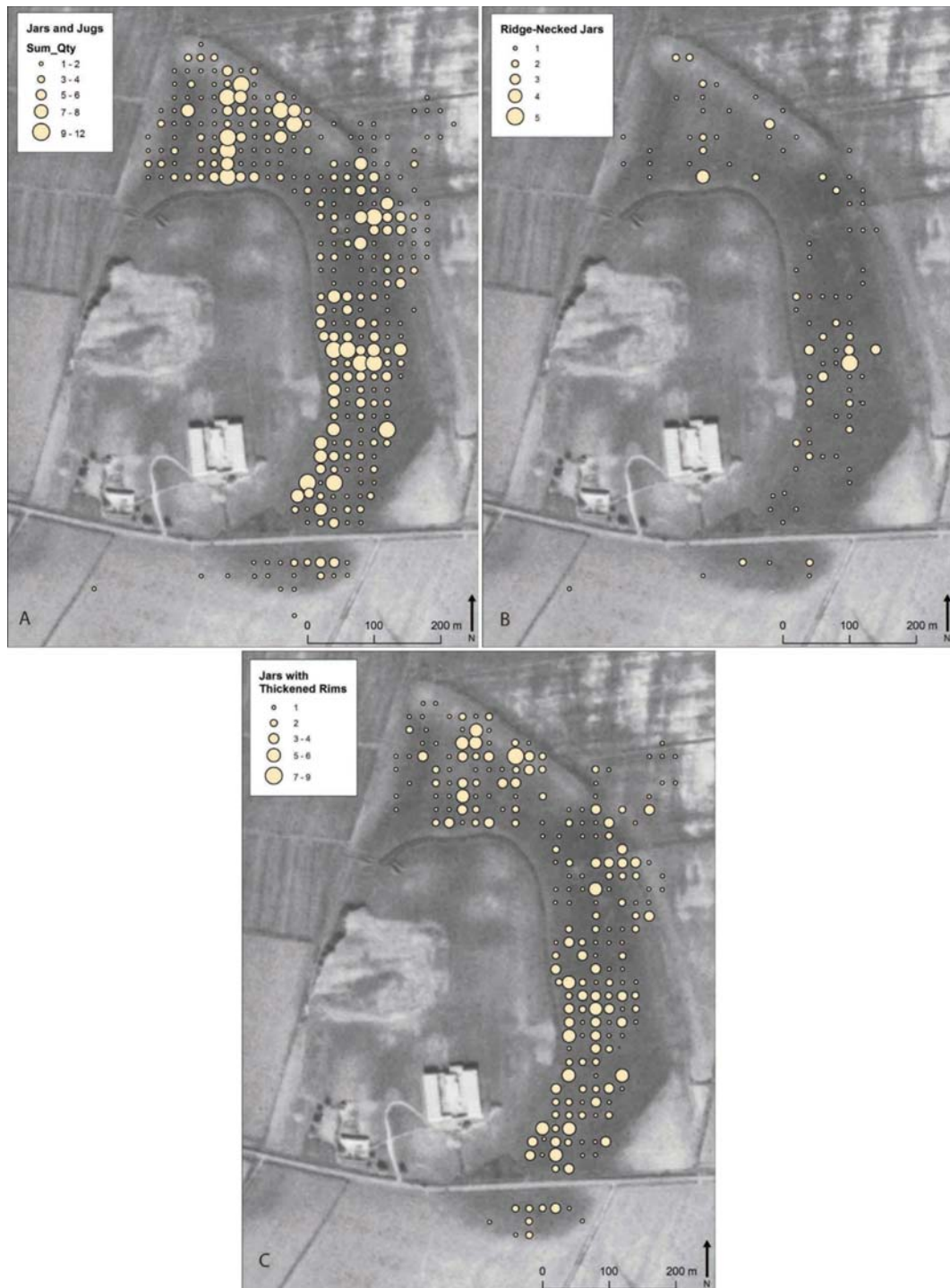


Fig. 14. *a*) Distribution of all jars and jugs across the lower town; *b*) distribution of ridge-necked jars; *c*) distribution of jars with thickened rims. Note the concentration of ridge-necked jars in the eastern lower town compared with the ubiquity of jars with thickened rims.



## Objects

TLTP collected 304 small finds, or just under one per collection unit (excluding collection units located beyond the edge of the ancient city). Each non-ceramic object discovered in the course of surveying a unit was collected and marked with the GPS; objects noticed in the processing of pottery, such as ceramic loom weight or figurine fragments, are placed on the map at the southwest corner of the survey unit (Fig. 15). As with the ceramics, the quantity of objects on the surface of the site points toward an incredible richness of material culture below the surface. Also like the ceramics, although the sample size is far smaller in this case, the objects show a general similarity in their distribution across Tayinat's lower town, with concentrations and negative spaces noticeable in the same areas as the pottery. Aside from a handful of miscellaneous objects from later periods that do not coincide with the periodization presented by the ceramics (e.g., Roman coins and an Ottoman pipe), the vast majority of these small finds belong to the early first millennium BCE.



Fig. 15. Locations of all objects recovered by TLTP.

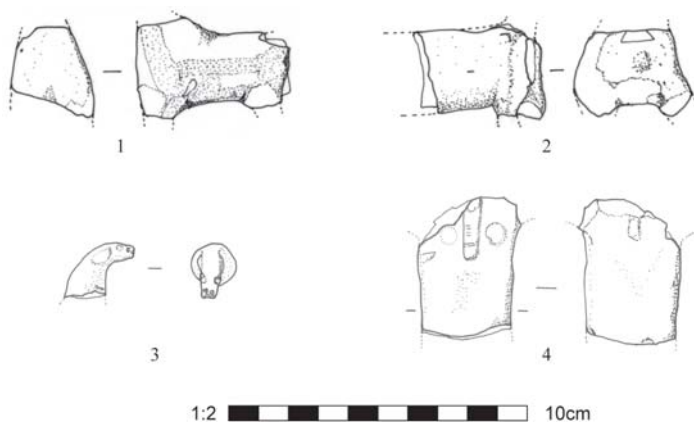


Fig. 16. Figurines (drawings by F. Haughey).

1. AS126.SS.14.C4.57.74, ceramic horse figurine fragment; 2. AS126.SS.14.G6.39.71, ceramic horse figurine fragment; 3. AS126.SS.15.J6.37.86, ceramic horse figurine fragment; 4. AS126.SS.15.D7.53.73, ceramic anthropomorphic figurine fragment.

## Figurines

The survey recovered 11 figurines. None of these was found complete. All but one of these are fragments of either the horse or human figure in the well-known horse-and-rider figurine type that characterizes this period, with parallels identified at Carchemish, especially its Lower Town, and at various sites in the Amuq Valley itself (Fig. 16.1-3) (Pruss 2010; Woolley 1952: Pl. 70; Bolognani 2014). One



figurine fragment appears to be a standing figure with its eyes fashioned from two added blobs of clay (though one is missing), a common decorative technique. Between the eyes is a long vertical nose, and arm extensions on the sides have been broken off. All of these pieces are handmade (Fig. 16: 4). No figurine or figurine fragments were found of the mold-made frontal, nude females with hands supporting the breasts, another type that is introduced in this period.

### *Textile industry*

Small finds related to the textile production on the warp-weighted loom at Tayinat are among the most common finds of TLTP, which recovered a total of 37 loom weights, 7 spindle whorls, and a stitching awl. The loom weights consist of two classes of objects: the first and most common ( $n = 22$ ) is the cylindrical unpierced weight made out of baked clay, sometimes referred to as spool, or reel, weights (Fig. 17: 1-2). Across the northern Levant and southeast Anatolia these appear to be derived from the Iron Age I period, at which time the form is unbaked, and is possibly related to Aegean parallels. The unbaked versions are present in the Iron I levels at Tayinat (Harrison 2009), and it is thus not surprising to find the Iron II baked versions in the lower town. Less common ( $n = 15$ ) are baked clay loom weights with perforations (Fig. 17: 2-4).

Most of these are doughnut shaped with vertical perforations, though two are conical with horizontal perforations. All of the spool, doughnut, and conical weights are common in the Tell Afis sequence, where the doughnut and conical versions become common during the late Iron II and Iron III periods, or the late 8<sup>th</sup> and 7<sup>th</sup> centuries (Cecchini 2000: 222). Of the seven spindle whorls, four are reused ceramic sherds that have been rounded and pierced in the middle (Fig. 17: 5), while three are conical in shape and made of stone; two of the latter are serpentine (Fig. 17: 6-7). Finally, a large shell stitching awl was recovered that partially resembles the Iron II bone spatulas found at Afis (Fig. 17: 8) (Cecchini 2000: Fig. 6).

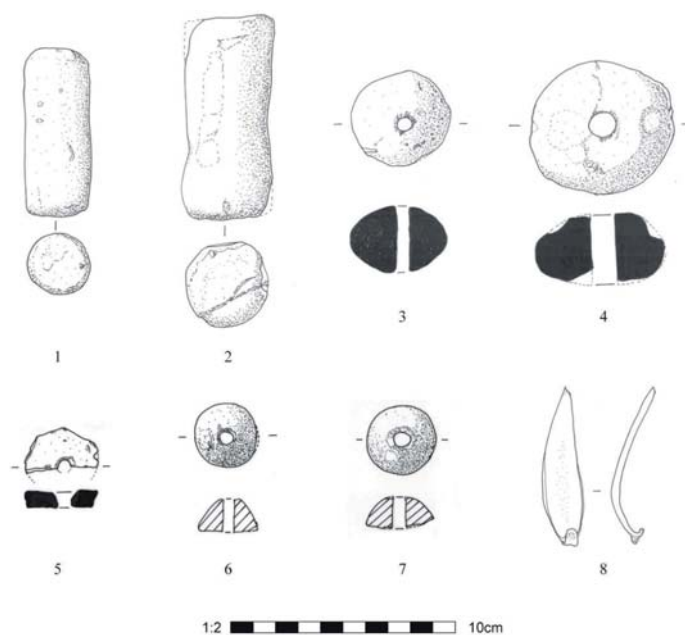


Fig. 17. Textile industry objects (drawings by F. Haughey).

1. AS126.SS.15.G7.93.90, ceramic cylindrical loom weight; 2. AS126.SS.15.J7.33.205, ceramic cylindrical loom weight; 3. AS126.SS.15.G7.71.195, ceramic doughnut-shaped loom weight; 4. AS126.SS.15.G6.77.85, ceramic doughnut-shaped loom weight; 5. AS126.SS.14.D6.17.80, ceramic spindle whorl, repurposed sherd; 6. AS126.SS.14.C6.71.40, serpentine spindle whorl; 7. AS126.SS.14.K6.55.8, serpentine spindle whorl; 8. AS126.SS.15.E6.39.202, shell, stitching awl.

### *Jewelry*

Three pieces of jewelry were identified across the lower town. One is a long, tubular bead made of lapis lazuli that is broken down its long axis (Fig. 18: 1). A second is a small (dia. 1 cm), black steatite bead with a flat surface on which are two bands of circular inlay. The outer circle is possibly a corroded metal, while the inner is apparently limestone (Fig. 18: 2). Finally, a small (length 1.5 cm) curved piece of lead may have been an earring, though this identification is not certain (Fig. 18: 3).



Fig. 18. Jewelry pieces (photographs by E. Booker, J. Jackson, and S. Karacic).

1. AS126.SS.15.E6.37.88, lapis lazuli bead, broken lengthwise down the middle;
2. AS126.SS.15.E6.55.89, steatite bead with metal(?) and limestone(?) inlay on surface;
3. AS126.SS.14.D4.33.90, lead, possible earring.

### *Slag*

Six pieces of slag were found, four of ceramic and two of iron. Given the presence of an Iron Age metal workshop on the mound where both bronze and iron were being produced, these finds tentatively suggest similar production activities taking place in the lower town.

### *Ivory*

A total of 11 pieces of ivory were collected, although the identification of at least five of these pieces remains uncertain pending specialist analysis. All are small and highly fragmentary. There is no evidence of worked or decorated surfaces, suggesting that either these fragments are not from the surface of finished objects, or perhaps that they are byproducts in the production sequence.

### *Chipped stone tools*

Chipped stone tools were relatively abundant, with a total of 22 taken from the surface of the lower town by TLTP. Of these, twelve are chert and the remainder flint. Interestingly, only seven of these objects were actual blades – the remainder are either debitage or cores from which blades were taken.

### *Basalt vessels*

Basalt vessels are, by far, the largest category of small finds found in the TLTP surface survey. A full third of the total number of objects recovered by TLTP are grinding stones ( $n = 101$ ), mostly consisting of loaf-shaped grinders, but also including quern stones and mortar fragments. Many more pieces of basalt were encountered over the course of the survey, but

basalt fragments were only collected and registered as objects if at least one worked surface was visible. Only slightly less frequent with 62 objects were fragments of basalt bowls and basins (Fig. 19: 1-4). Most of these bowls have a simple curved profile with a rounded lip, but several required greater amounts of time and energy to produce. The latter includes profiles that parallel the ceramic repertoire, such as bowls with a thickened exterior rim, or a ridge running around the rim (Fig. 19: 2-3). The discovery of three bowl legs suggests what the complete vessel would have looked like (Fig. 19: 1), and also parallels Red Slipped Burnished Ware tripod bowls that have been excavated on the acropolis (Osborne in press). All of these basalt vessels are ubiquitous across the lower settlement of Tayinat.

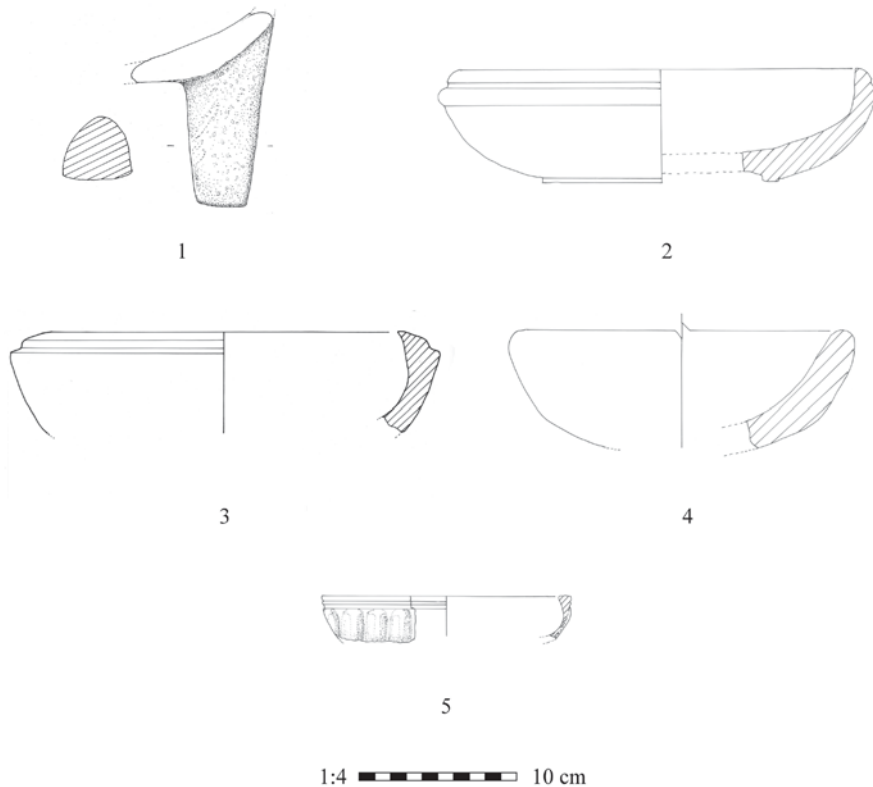


Fig. 19. Stone bowl fragments (drawings by F. Haughey).

1. AS126.SS.14.D5.51.67, basalt bowl leg; 2. AS126.SS.15.H6.75.83, basalt bowl with thickened exterior rim; 3. AS126.SS.14.C5.53.76, basalt bowl with thickened exterior rim; 4. AS126.SS.15.J6.71.84, simple rounded basalt bowl; 5. AS126.SS.15.G7.71.201, serpentine gadroon bowl fragment.

### *Basalt statuary*

Two fragments of basalt statuary with clear worked faces were found in the same collection unit, G7.11, 75 m east of the middle of the tell – that is, right in the heart of the lower town. Their proximity to one another suggests that they derive from a single monument, but this cannot be demonstrated. One of them is 12.7 × 6.5 cm and clearly illustrates the curly hair

pattern that characterizes local Syro-Anatolian monumental statuary (Fig. 20a) (Orthmann 1971). The second one is  $11.2 \times 10.6$  cm with a well-preserved worked surface that is insufficiently large to make out what is being depicted (Fig. 20b); one possibility is that it displays a portion of a textile pattern.

These objects are too far from the tell, and too close to one another, to have traveled to their findspots from somewhere on the acropolis. Their significance, and that of the head fragment especially, is thus two-fold. First, their presence suggests that at least part of the lower town was occupied by elite space of the kind that befitted monumental arts. Second, the clearly local iconographic tradition of the curly hair situates at least this area of the lower town comfortably within a pre-Assyrian cultural and chronological context, providing support for conclusions only tentatively reached by means of ceramics.

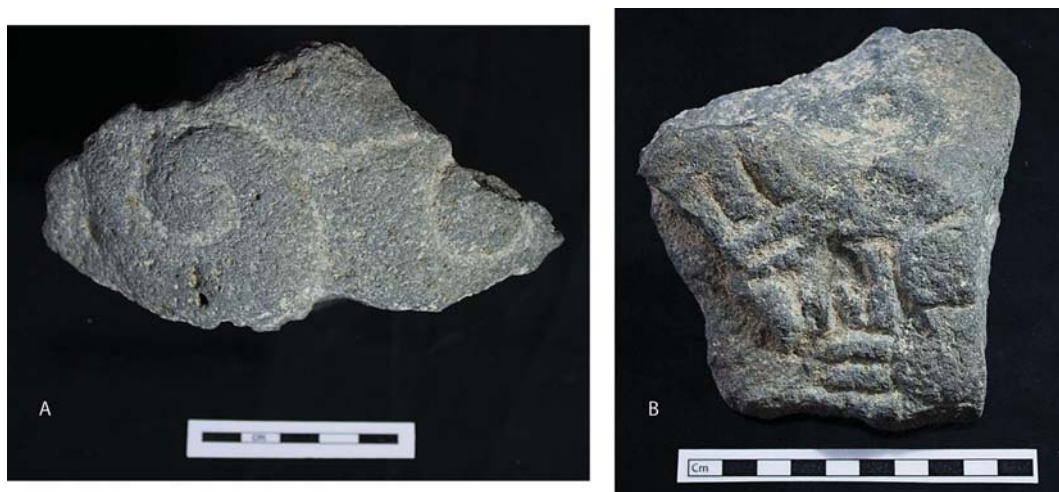


Fig. 20. *a*) Basalt fragment from a colossal Syro-Anatolian statue, with the curls representing hair; *b*) basalt statuary fragment with an unidentifiable pattern (photographs by E. Booker and S. Karacic).

#### *Fine stone objects*

In a different tradition of stone craftsmanship than the basalt working just described, two pieces of bowls were found that display extremely high levels of craftsmanship. The first is a fragment of a serpentine bowl that preserves perhaps 20% of the original vessel. This bowl is the so-called gadroon, or fluted, bowl, that has bronze parallels from Syro-Anatolian city-states including Hama and Tell Halaf (Fig. 19: 5). The second is a very small piece ( $2.7 \times 1.6$  cm) of a red serpentine bowl. The preserved fragment shows the flat rim of the vessel curving into the shallow profile, and gripping the rim are three knuckles. This is a clear, though highly fragmentary, example of an Iron Age II lion bowl, perhaps used as a censer or for liquids (Fig. 21: 1). A complete example of this bowl was excavated by the Syrian-Hittite Expedition from the Iron II levels of Çatal Höyük (Neumann 2016), and examples have been published from the contemporary level at Hasanlu with parallels to other Syro-Anatolian sites (Muscarella 1974; van Loon 1962).



Besides these two bowls TLTP collected four pieces of worked steatite and serpentine that were either unfinished objects (Fig. 21: 2-3) or from other stages in the production process, including a piece with drill holes and one serpentine cylinder that appears to be an example of what was removed from such drill holes (Fig. 21: 4).

### Seals

TLTP collected a single steatite stamp seal. Its height is 1.3 cm and the square sides of its flat face are 1.7 cm long. A small handle is pierced with a horizontal hole allowing for suspending the seal on a string. The face is engraved with figurative decoration that is unfortunately too abstract to make out clearly, though the figures look vaguely anthropomorphic (Fig. 21: 5).



Fig. 21. Fine stone objects and seals (photographs by E. Booker and S. Karacic, drawing by F. Haughey).

1. AS126.SS.15.G7.95.212, serpentine lion bowl fragment (rim plus lion knuckles grasping rim), profile view (left) and underside view (right);
2. AS126.SS.15.E6.55.206, serpentine drill piece with drill holes;
3. AS126.SS.15.G7.55.64, serpentine incomplete vessel;
4. AS126.SS.15.F6.57.199, serpentine cylinder, possible drill hole negative;
5. AS126.SS.15.G7.75.82, steatite stamp seal.

### Spatial distribution

Because the objects' total sample size is relatively small, spatial patterns are more tentative, and in lower resolution, than they are with ceramics. Nevertheless, a few preliminary observations can be made. The first is simply the sheer ubiquity of basalt vessels of all kinds across the site, especially grinding stones and bowl fragments (Fig. 22a). Basalt objects were clearly a major component of early first millennium material culture in the lower town at Tayinat, and were apparently used both for food production and consumption.

The second is a modest clustering of loom weights and spindle whorls in the middle of both the north and east fields (Fig. 22b), suggesting that textile production was not evenly distributed across the settlement. To the extent that textile production took place at a household scale, this finding may indicate that the places where these objects were *not* found are either devoid of settlement or occupied by buildings that are not domestic in nature. Interestingly, one of the largest areas that is devoid of textile industry small finds is the northeast sector of the lower town, precisely where ceramics (Red Slipped Burnished Ware and Cypriot wares) had pointed toward an elite or otherwise non-domestic residence.

Finally, non-basalt stone working clearly took place only on the east side of the lower town, where all of the beads, chipped stones, and fine stone products were located, including the pieces of steatite and serpentine that were clearly part of the production process. This is also the same region where TLTP's limited sample of ivory pieces were found (Fig. 22c). If ivory workshops and lapidaries were present in ancient Kunulua, this is the vicinity of the city to find them.

## DISCUSSION

Although a survey of a Syro-Anatolian capital city's lower town at TLTP's degree of intensiveness is unique, there are other sites that have undergone exploration in these areas in one form or another. Surface survey conducted at 'Ain Dara – not a capital city *per se* but nevertheless a large and significant Syro-Anatolian site – discovered densities of Iron II pottery in specific areas, which then became the subject of targeted excavation (Stone & Zimansky 1999); the survey's comparatively low resolution and brief report do not allow for direct comparison with TLTP, though the small-scale structures that were excavated are in line with the non-elite structures that TLTP expected to find at Tayinat. Woolley's excavations at Carchemish exposed a small area at that city's lower town (Woolley 1952), and the renewed Turco-Italian joint project at the site has begun a major research initiative that promises to bring to light a host of information about this sector of Carchemish, arguably the most significant of the Syro-Anatolian capitals. The recent University of Chicago excavations at Zincirli, ancient Sam'al, and Kunulua's neighbor to the north, have opened a large horizontal exposure in the lower settlement there and have found a series of large-scale buildings, inside one of which was the KTMW mortuary stele (Schloen & Fink 2009; Struble & Herrmann 2009).

In short, given the relative paucity of data, it is not yet possible to create a generalizable model for how the lower towns of Syro-Anatolian capital cities functioned in social or economic terms (Osborne 2017). The impressive buildings unearthed at Zincirli, for example, contrast sharply with the residential remains at 'Ain Dara and potentially with Tayinat as well, where TLTP discovered a number of spatial indications for at least two elite zones – one in the northeast indicated by ceramics, one in the central east indicated primarily by monumental statuary fragments – surrounded by more quotidian areas. What evidence exists so far suggests that such a model might not be feasible, and that in fact individual cities operated under distinct social and economic principles related to the particular historical exigencies that they faced. The same applies with respect to urban planning: although test soundings by the Syrian-Hittite

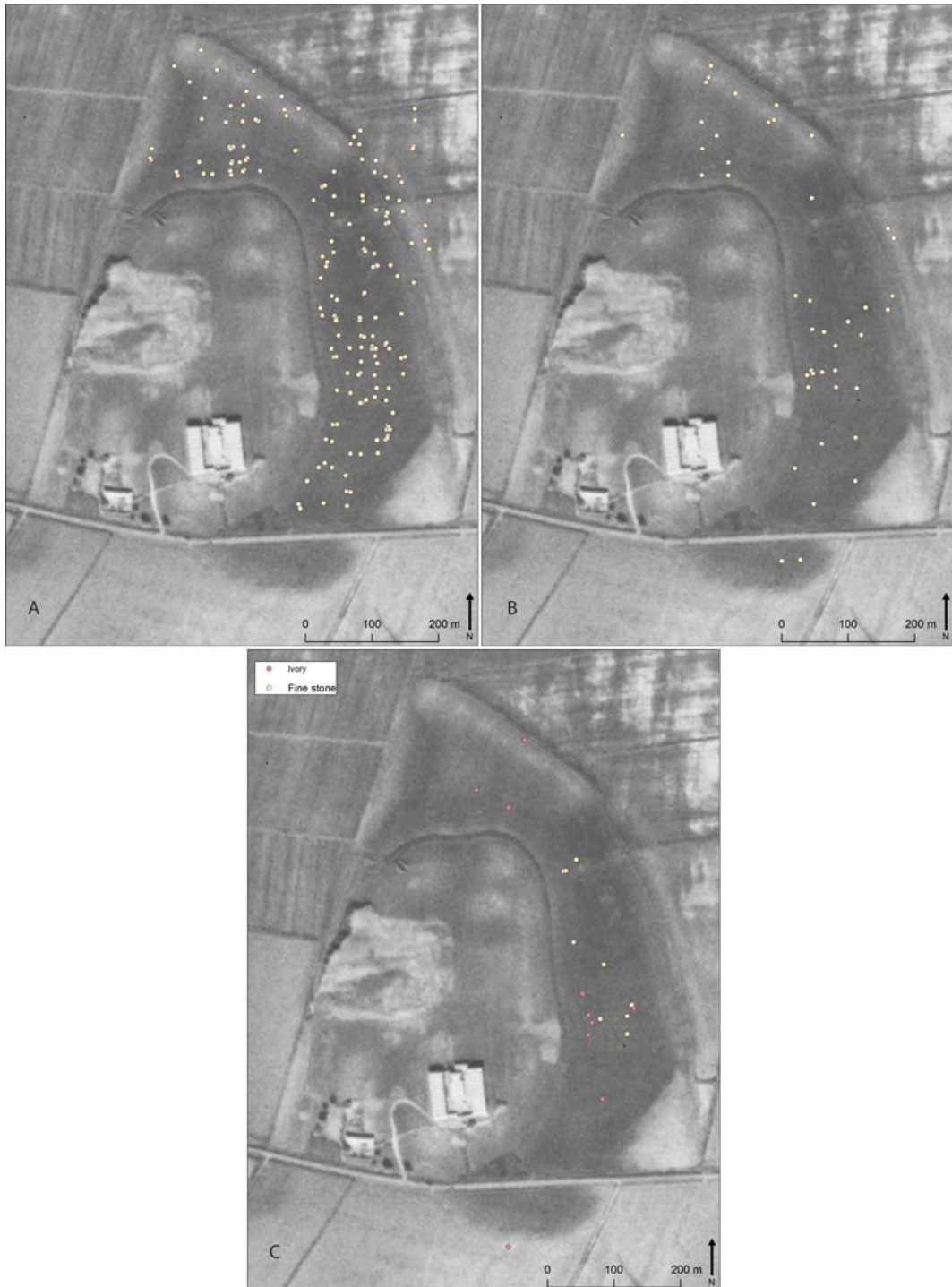


Fig. 22. *a*) Distribution of all basalt objects; *b*) distribution of loom weights and spindle whorls; *c*) distribution of fine stone and ivory objects. Note the clustering of textile production in the north and east areas of the lower settlement, and the concentration of fine stone and ivory objects in the east.

Expedition and recent geomagnetic work in Tayinat's lower town found indications of possibly multiple paved streets, it seems unlikely that Tayinat's lower town was planned to the same degree as Zincirli (Casana & Herrmann 2010: Fig. 4). Only a long-term, sustained research initiative into these long-neglected sectors of multiple Syro-Anatolian urban centers will clarify these questions.

#### CONCLUSIONS AND FUTURE RESEARCH

The Tayinat Lower Town Project's intensive surface survey has contributed substantially to our understanding of Tell Tayinat, ancient Kunulua, as a holistic urban phenomenon. Chronologically, TLTP produced additional support for dating the site's occupation in at least part of this area to the Early Bronze Age. The first millennium occupation appears to have begun off the north and northeast edges of the main mound, after which it spread to occupy the entire lower town by the mid-Iron Age II period. However, TLTP also demonstrated that even at the height of its occupation, settlement was not evenly distributed across Tayinat's lower town. To the contrary, clear clusters of sherd counts and weights point to a patchy occupation, with several large areas of thinly settled, or possibly even empty, space. Certain categories of objects tend to cluster together, such as specific bowl and jar types, whose explanation is difficult to determine. Other examples of clustered spatial distributions, such as objects pertaining to textile and stone working industries, more clearly point toward the spatial loci of specialized craft production. TLTP has thus generated a great deal of critical information that pertains directly to the first two major research questions posed at the outset of the project – understanding urban processes beyond the monumental acropolis of the city and the nature of Iron Age craft specialization. The third research question, concerning the archaeological signature of the Neo-Assyrian forced migration in which Tayinat participated, has also benefited from our clarification that Tayinat's lower town was occupied both before and after the Assyrian conquest of 738 BCE. At the same time, it is intriguing, and a question to be directly addressed by future research at the site, that there is no morphologically or stylistically obvious indicator for the presence of non-local individuals at any period.

All three of these topics are questions to be pursued through further archaeological fieldwork, especially excavation. All other things being equal, TLTP hopes to continue pursuing this research agenda through targeted excavations in some of the areas identified as having high potential by the surface survey. These include the apparently non-elite contexts of the southeast and northern quarters of the city, and the wealthier district in the northeast. Each of these areas, and Tayinat's outer settlement generally, offers enormous potential for expanding our understanding of Iron Age urbanism off the acropolis and into the lower town.



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## A PRELIMINARY REPORT ON THE EARLIEST NEOLITHIC LEVELS AT UĞURLU ON THE ISLAND OF GÖKÇEADA

Burçin Erdoğan\*

### *Abstract*

*The earliest occupation at Uğurlu is characterised by the absence of pottery and the presence of flint and obsidian tools with pressure flaking technique. The site dates as far back as 6800 cal. BC and has yielded evidence of a fully Neolithic economy. There are only a few sites (Ulucak, Girmeler, Knossos, Çukuriçi) along the Western shores of Anatolia, as well as on the Aegean Islands, that are securely dated before 6600/6500 cal BC. This paper presents some preliminary results of the earliest occupation layers at Uğurlu.*

### INTRODUCTION

The beginning of the Neolithic way of life along the Western shores of Anatolia, as well as on the Aegean Islands, is currently a hotly debated topic. Some scholars argue that colonists migrated wholesale directly from the Near East to the Western Anatolian shores, using sea routes (Horejs *et al.* 2015) or land routes (Özdoğan 2011; Çilingiroğlu and Çakırlar 2013). Some scholars argue also that Neolithic colonists migrated directly to the Aegean islands from the Anatolian coasts (Broodbank and Strasser 1991; King *et al.* 2008) or those of the Levant (Perlès 2001; Horej *et al.* 2015). On the other hand, the Neolithization process of the Western shores of Anatolia, as well as the Aegean Islands, is surely a far more complex phenomenon than previously considered, and it is still far from being well understood. It is possible that different regions followed different rates in adopting Neolithic elements. Likewise, many different scenarios might be involved in different regions. In addition, as J. Thomas pointed out, 'farming' and 'the Neolithic' are not quite the same thing: *'Farming is an economic system that involves control over the reproduction of animals and plants, while the Neolithic is a form of sociality that is often (but not always) associated with it'* (Thomas, 2013: 678). Thus current views on the Neolithization process in the Aegean are open to reconsideration (Erdoğan *in press*).

In order to illuminate the Neolithization process that occurred on the Western shores of Anatolia, as well as on the Aegean Islands, information about the first half of the seventh millennium BC needs to be collected and analysed. Knossos in the island of Crete, Ulucak, Girmeler Cave, and Çukuriçi on the Western shore of Anatolia are the only sites that securely date to before 6600/6500 Cal BC. (Reingruber 2015; Horej *et al.* 2015; Takaoğlu *et al.* 2014; Perlès *et al.* 2013; Çevik and Abay 2016). In the earliest levels at Knossos, ca. 7000-6700 cal. BC, there is no pottery, but two baked clay figurines have been found. The site yielded evidence of a fully Neolithic economy: domesticated sheep, goat, pig and cattle, and cultivated cereals

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and legumes (Perlès *et al.* 2013; Efstratiou *et al.* 2013). In the earliest level at Ulucak VI, ca. 6800 cal. BC, there is likewise no pottery but no other clay objects either. The buildings have lime plastered floors which are painted red and they contained evidence of domesticated animals, including sheep, goat, cattle and pig, and cultivated cereals and legumes (Çevik and Abay 2016). A building with a similar red lime plastered floor but with a few pottery sherds also was found in Çukuriçi XIII, ca. 6800 cal BC, along with a full range of domesticated animals, including sheep, goat, cattle and pig, and cultivated cereals (Horejs *et al.* 2015). At the entrance of the Girmeler Cave near Fethiye, early seventh millennium BC layers (ca. 7000 cal. BC) were discovered exposing buildings with lime plastered floors, a few pottery sherds and cultivated cereals (Takaoglu *et al.* 2014).

The recent excavations at the site of Uğurlu on the island of Gökçeada supplement the evidence reported above in revealing that the earliest occupation at the site is dated back to the same general time-frame, the first half of the seventh millennium BC. The site of Uğurlu is located on the western part of the island of Gökçeada (Imbroz), in the Northeastern Aegean (Fig. 1). It is a low mound covering an area of approximately 250 × 200 m on a gentle slope at the eastern foot of Mount Isa (Doğanlı). The Pilon stream runs along the eastern part of the site, and there is also a nearby spring. Six main cultural phases, designated as I-VI (counting from top to bottom), and at least 15 layers of occupation have been revealed so far (Erdoğan 2014; 2016). For the purpose of this paper we present a brief overview only of the earliest phase at Uğurlu, Phase VI, which dates from 6800 to 6500 cal. BC, and the transition layers to Phase VI.

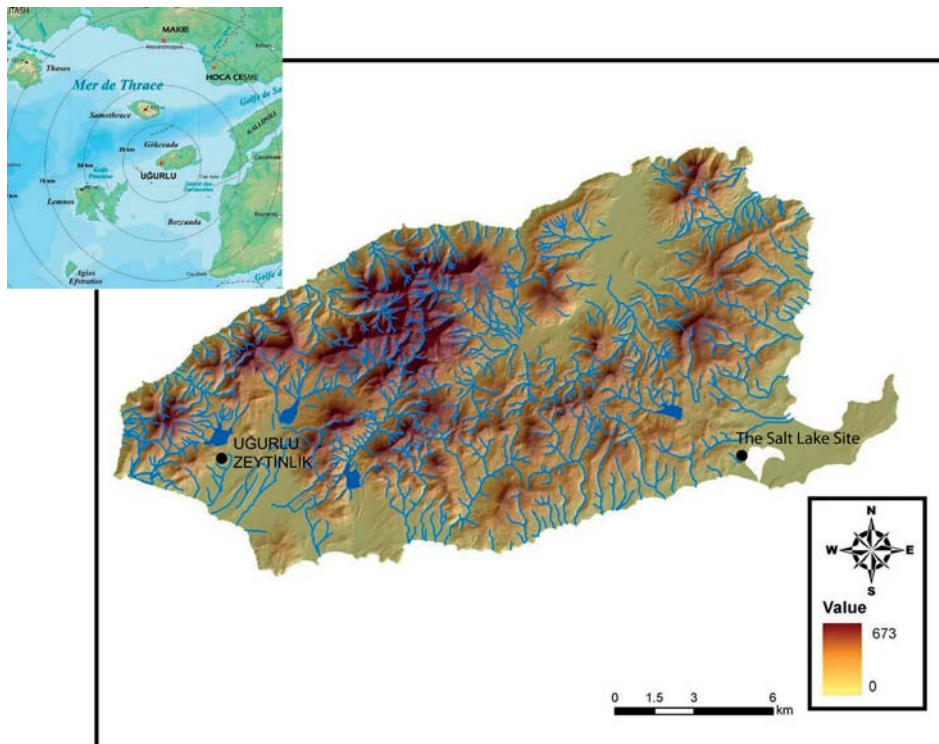


Fig. 1. Map of the island of Gökçeada showing location of Uğurlu.

## Uğurlu Phase VI

The earliest occupation (Phase VI) at Uğurlu is located in the eastern part of the settlement, close to the Pilon stream, and is represented in two deep trenches in the eastern part of the settlement, namely BB20-21 (3 m<sup>2</sup>) and CC21 (9 m<sup>2</sup>). The thickness of the deposit is about 30 cm in BB20-21, although virgin soil has not yet been reached. Phase VI in BB20-21 is divided into 4 layers, all of which produced chipped stone. White coloured clay floors,

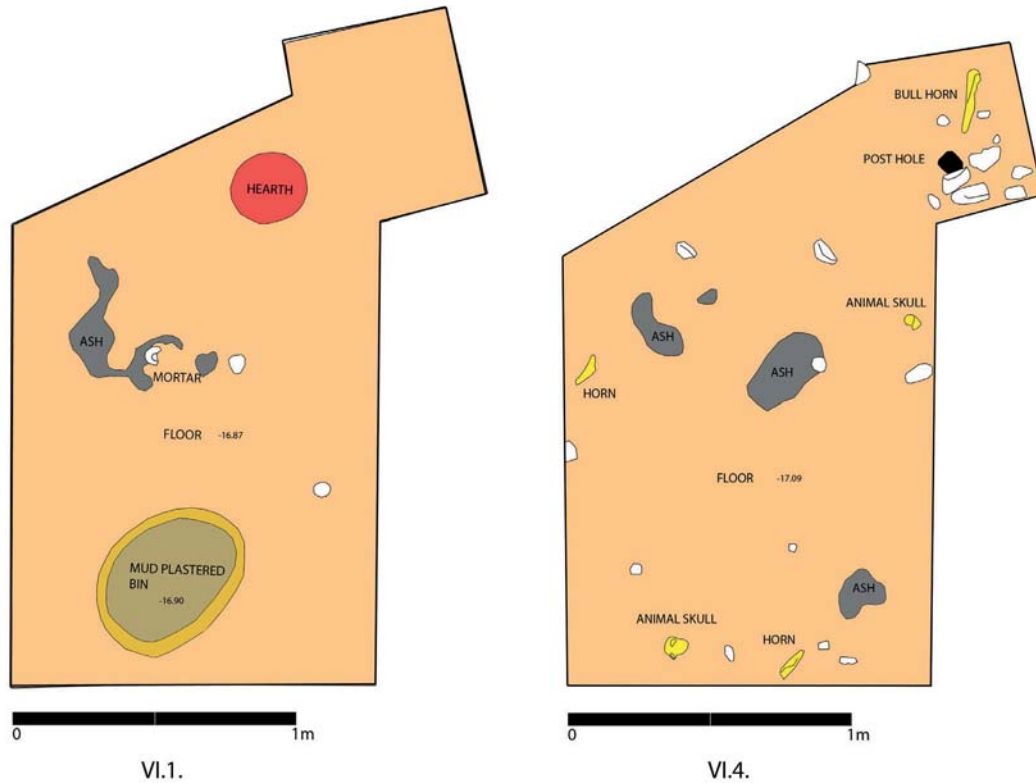


Fig. 2. Plans of Trench BB20-21, Phase VI.1 and VI.4.

identified as “soft lime”, separate the different layers. In the earliest layer, VI.4, a thin white coloured floor with patches of ash was revealed. A 10 cm diameter posthole, supported with stones, was found in the northern part of the trench (Fig. 2). Three horns (one large bull horn) and two animal skulls were discovered on the floor. There are also three stone beads, and two bone awls (Fig. 3). No pottery was found in this layer, which did produce a shaft straightener.

A white coloured clay floor with a cluster of two large mammal ribs and pieces of a skull represented Layer VI.3. Two broken bone spatulas and a stone bead were also discovered in this layer, but no pottery or any other clay objects were recorded. Layer VI.2 lies just above VI.3 and embodied a pebble surface floor, painted red, in the north-eastern corner of the trench but which, unfortunately, stretched outside the limit of excavation, although red lime plastered floor pieces were also discovered in this layer (Fig. 4).



Clear archaeological features were observed in layer VI.1, specifically an oval sunken mud plastered basin and a hearth, ca. 50 cm in diameter, associated with a white coloured clay floor (Fig. 2). In total three pottery sherds were picked up from this layer. The pottery is fine and mineral tempered, while organic temper is almost absent. These sherds are well burnished and have a wall thickness ranging between 5 and 6 mm. One rim sherd is red slipped and is from a globular bowl of closed form (Fig. 5). One body sherd is dark brown in colour, while the interior of another body sherd is orange and the exterior is brownish orange. Three bone spatulas, two stone chisels (Fig. 6), stone and shell beads were collected in the debris of the floor.

In Trench CC21, no architectural structures were identified, with the possible exception of scattered clusters of stones directly overlying the virgin soil. The thickness of the deposit is about 30 cm. However, eight small sherds were discovered, all handmade and mineral tempered. Two of them are red unburnished sherds and the rest are black and lightly burnished. Small finds consist of bone awls and spatulas, stone and shell beads, one bead probably made from *Spondylus Gaederopus* (Fig. 7).

Studies of plant and faunal remains are still ongoing. A flotation sample of 200 litres has been analysed so far and some cereal grains have been identified. Animal bones from Phase VI layers 2-4 demonstrate the presence of domestic sheep, goat, pig and cattle.

A large quantity of chipped stones was found in Phase VI, all produced from local flint. According to Denis Guilbeau, who works on the chipped stone industry of Uğurlu, tools are very rare and most of consists of blanks (blades and flakes) used

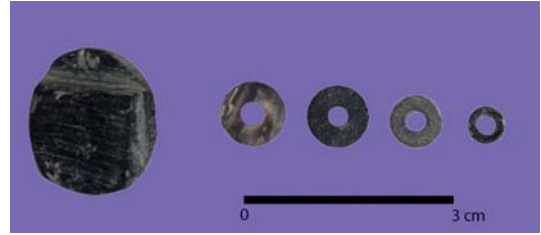


Fig. 3. Stone beads and a shaft straightener from Phase VI.

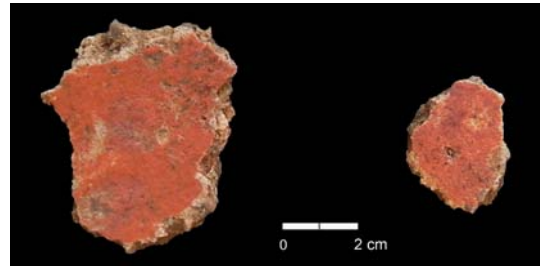


Fig. 4. Red painted lime plasters from Phase VI.2.

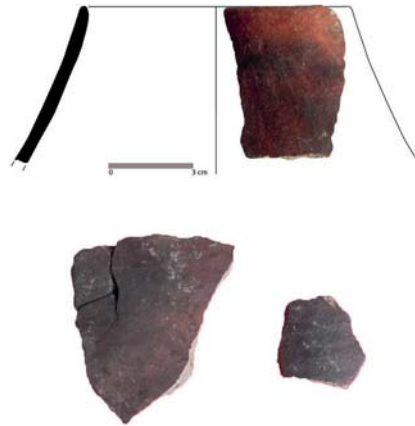


Fig. 5. The early pottery from Phase VI.1.



Fig. 6. A stone chisel from Phase VI.1.

directly without any retouch. There are also some sickle inserts but no microliths. Pressure blades are quite numerous, including large ones. The majority was made by the standing pressure flaking mode. Some may have been made by the lever pressure mode. The use of these pressure technique modes indicates that the flint knappers were highly skilled.



Fig. 7. A shell bead from Phase VI in Trench CC21.

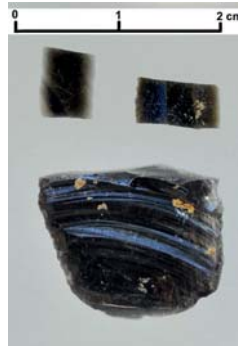


Fig. 8. Obsidian from Phase VI.

Six small pieces of obsidian were found in layer VI.4 and 6 others in Layer VI.1 (Fig. 8). The small blades were also made by pressure technique, but a few of more than 13 mm in length were made by the standing pressure technique. Portable X-ray fluorescence analysis of 4 pieces of obsidian shows that all originate from Melos.

Trench	Layer	Date	Pottery	Worked bone	Polished stone	Beads	Obsidian	Other
BB20-21	Layer VI.4	6800 cal. BC	none	awl	none	stone	6	shaft straightener
BB20-21	Layer VI.3	6750 cal. BC	none	awl, spatula	none	stone	-	
BB20-21	Layer VI.2	6700 cal. BC	none	-	none	stone	-	red painted lime plaster
BB20-21	Layer VI.1	6640 cal. BC	present	awl, spatula	present	stone, shell	6	
CC21	Layer VI.1	6640-6500 cal. BC	present	awl, spatula	none	stone, shell	-	

Table 1. Comparative characteristics of Uğurlu Phase VI Layers.

### The early Phase V

Uğurlu Phase V is also divided into 4 layers and two layers, V.4 and V.3, represent the transition from Phase VI. Phase V is characterised by a dramatic increase of pottery, which now has become the most distinctive element of the material culture. Layer V.4 has been excavated in limited areas, namely in Trenches BB22 and BB20-21, whereas Layer V.3 has been examined in Trench BB20-21 only. Trench BB22 yielded a working floor with an extremely dense concentration of animal bones, flint and obsidian tools, and bone spatulas. A building with damaged mud walls on a stone foundation, so far partly excavated, was found in Trench

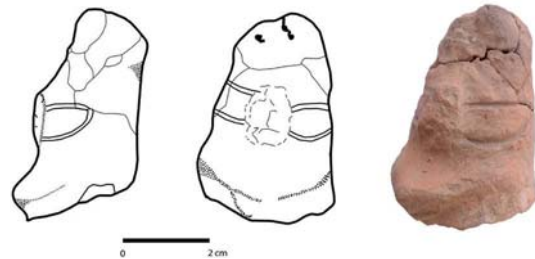


Fig. 9. A 'coffee-bean-eyed' figurine head from Phase V.3 (drawing by B. Erdoğu).



Fig. 10. Partly excavated Neolithic building belonging to Phase V.3.

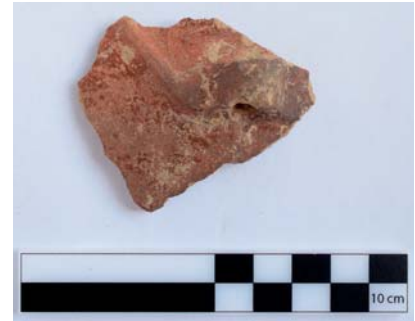


Fig. 11. A relief horn on a vertically placed tube-like lug.

BB20-21 (Fig. 9). The building's orientation is northwest-southeast; only the northern and western walls have survived. The walls are ca. 50 cm wide, and the remaining northern wall section extends for about 4 m. The floor of the building was plastered with white coloured clay, and bone implements and a malachite lump lay on the floor. Next to a stone foundation of another disturbed building, patches of thick white-coloured compact floors with circular and horseshoe shaped hearths were noticed. Moreover, an Anatolian Hacilar type of 'coffee-bean-eyed' figurine was retrieved from this area (Fig. 10).

All the pottery is handmade and thin walled. It has been sorted into three distinct ware-type groups. Red-slipped burnished ware is dominant, comprising 60% of the total assemblage. The other wares comprise black/grey and brown burnished. Sometimes different tones of red slip are applied on the exterior surfaces of the black/grey ware frequently producing mottled surfaces. Deep bowls with an "S" profile, hole-mouth vessels and straight-sided shallow dishes are common shapes. Bases are either flat or have a low pedestal. Vertically placed knob-like or tube-like, perforated tubular lugs, as well as small crescent shaped lugs are characteristic. Decoration is rare; small relief horns on vertically placed tube-like lugs are noteworthy (Fig. 11).



Fig. 12. The Salt Lake site.

### A contemporary site near the Gökçeada Salt Lake

Surface surveys show that Uğurlu was not the only early Neolithic site on Gökçeada, and the indications are that a site near the Salt Lake, in the southeastern part of the island, is probably contemporary with Uğurlu Phase VI. This site lies on the western bank of the Salt Lake and most of its surface is flooded by saltwater all year round, except in summer (Fig. 12). Four soil cores, to a depth of 3–4 m, were taken from the southern part of the Salt Lake (Öner *et al.* 2013). These indicate that a much smaller salty lake existed during Prehistoric times. The ground survey of the site identified chipped stone implements only, and no pottery or ground stones were discovered. The raw materials are similar to the raw materials used at Uğurlu, and Portable X-ray fluorescence analysis shows that the four pieces of obsidian collected from the surface come from Melos. Denis Guilbeau, points out that flakes are dominant and flake cores also occur. Tools are quite abundant among which a foliate point draws special attention (Fig. 13). Blades are quite rare and most of them were made using the pressure technique. Some of them may have been used as sickle inserts.

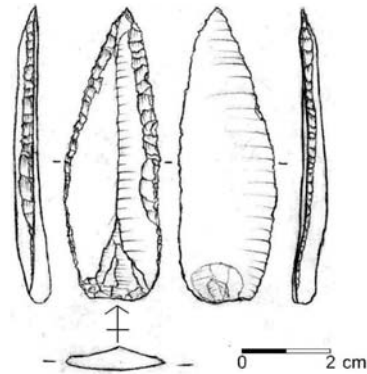


Fig. 13. A foliate point from the Salt Lake site (drawing by D. Guilbeau).

### Absolute Dates for Phase VI

Five AMS radiocarbon dates are currently available from Uğurlu VI; three come from Trench BB20-21 and two from Trench CC21 (Table 2). Those from Trench BB20-21, all from charred material, are: from Layer VI.4, Sample Beta – 448093:  $7890 \pm 30$  BP, or 6814–6634 cal. BC ( $2\sigma$ ); from Layer VI.2, Sample Beta-427241:  $7820 \pm 40$  BP, or 6774–6566 cal. BC; and from Layer VI.1, Sample Beta-448092:  $7740 \pm 30$  BP, or 6641–6492 cal. BC ( $2\sigma$ ). The results from Trench CC21, from bone collagen, are: Samples AA106098:  $7760 \pm 30$  BP, and AA106099:  $7690 \pm 40$  BP, calibrated with a range from ca. 6640–6500 cal. BC. These might be usefully compared to two AMS radiocarbon dates from the Phase V.4 (Beta-448094:  $7650 \pm 30$  BP and Wk-29173:  $7618 \pm 36$  BP), as this suggests that occupation between Phase V and VI continued without a gap.

Bayesian chronological modelling of radiocarbon dates (Bayliss 2009), using OxCal and the General outlier model of Bronk Ramsey (2009), as well as the IntCal09 radiocarbon calibration dataset (Reimer *et al.* 2009), have been applied to Uğurlu and contemporary sites, such as Ulucak and Çukuriçi. The “Start Boundary” for the five dates from Uğurlu Phase VI and the two dates from early Phase V lies at around 6823 cal. BC (95.4%), and the “End Boundary” at around 6574 cal. BC (95.4%) (Fig. 14). Ulucak VI is dated by 16 determinations, with the “Start Boundary” around 6857 cal. BC (95.4%), and the “End Boundary” around 6484 cal. BC (95.4%) (Fig. 15). For three samples (wheat and an unidentifiable cereal) from Çukuriçi XIII and four dates from Çukuriçi XII, the “Start Boundary” is around 6833 cal. BC (95.4%), and the “End Boundary” is around 6582 cal. BC (95.4%). The attested early occupation for all sites begins around 6800 cal. BC.

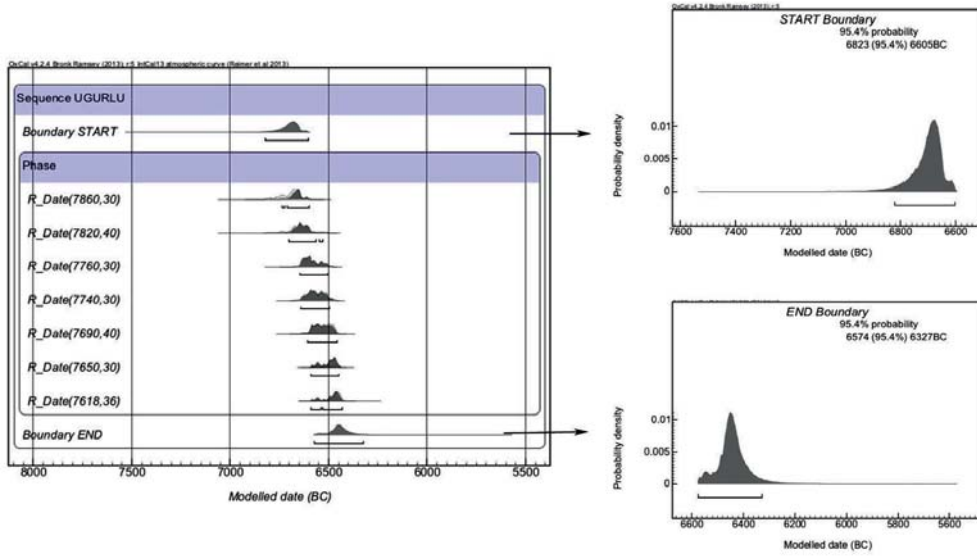


Fig. 14. Radiocarbon samples from Uğurlu Phase VI and early V presented according to Bayesian chronological analysis. The “start” and the “end” boundaries are shown in detail.

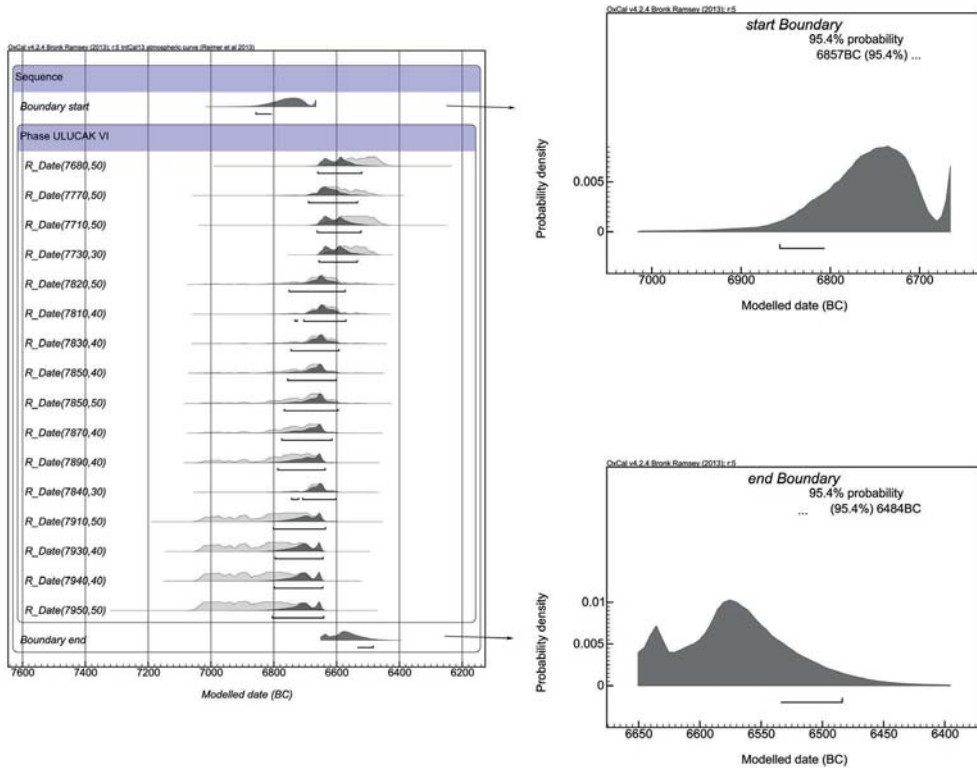


Fig. 15. Radiocarbon samples from Ulucak VI V presented according to Bayesian chronological analysis (Çevik and Abay 2016, Fig. 1). The “start” and “end” boundaries are shown in detail.



Lab.No.	Material	Date BP	Cal BC (2 sigma)
Beta-448093	Charred material	7890 $\pm$ 30 BP	Cal BC 6814-6634
Beta-427241	Charred material	7820 $\pm$ 40 BP	Cal BC 6774-6566
AA-106098	Bone collagen	7760 $\pm$ 30 BP	Cal BC 6646-6505
Beta-448092	Charred material	7740 $\pm$ 30 BP	Cal BC 6641-6492
AA-106099	Bone collagen	7690 $\pm$ 40 BP	Cal BC 6604-6456

Table 2. Uğurlu Phase VI Radiocarbon dates.

## DISCUSSION AND CONCLUDING REMARKS

Reingruber (2015) has recently presented a quite precise description of the Preceramic period in the Aegean. According to that, the evidence of Phase VI.4-VI.2 at Uğurlu is that Preceramic layers exist there. It seems that this period represents a short period of time at our site, quite likely a mere 50 years or so, beginning around 6800 cal. BC., and the evidence is that the full range of domesticated animals and cultivated cereals were available at that time. Geomorphological investigations show that around 7000-6500 cal. BC the sea level of the Aegean was about 20 m lower than today and so the site was located far from the contemporary shoreline (for discussion see Özbek and Erdoğan, 2014). Archaeobotanical research demonstrates that the first settlement was located in an area where small lakes and swamps occur, and the Neolithic inhabitants of Uğurlu lived near a spring in this well-watered fertile area. Soft-lime deposits exist close to the site, and there is considerable evidence that lime plaster was essential to life at Uğurlu, i.e. plastered floors, walls and silos.

The earliest pottery found at the site appears at around 6600/6640 cal. BC and its quantity is quite limited. Furthermore, this pottery appears to be of a fully developed type with mineral tempering and it suggesting that the technology was imported from the outside. In the Western part of Anatolia, pottery occurs in Girmeler around 7000 cal. BC, and the oldest pottery fabrics found there consist mainly of coarse, grit-tempered gray/black clay, with a reddish-brown surface color, with close similarities to that of the Lake District sites, especially the early phases at Bademağacı (Duru 2008, Res. 109). The pottery assemblages of Uğurlu are quite different from those of Girmeler. A few pottery sherds are said to have been discovered in Çukuriçi XIII, but no diagnostic rim or base sherds were recorded. It seems possible that Çukuriçi sherds are related to the early Lake District pottery. The earliest pottery in the Marmara region was found in Barcın Ve, ca. 6600 cal BC (Gerritsen *et al.* 2013), and the fabric and forms seem different to Uğurlu.

The pressure technique was commonly used in the chipped stone industry of early Uğurlu, and it seems that the flint knappers were highly skilled. According to Binder *et al.* (2012), the origin of pressure blade technology is still unresolved. The pressure technique appeared around 8500 cal. BC in the Near East and in the second half of the eighth millennium cal. BC in the Upper Capsian culture of North Africa. It was also a common technique in the Mesolithic groups of the western Mediterranean during the seventh millennium cal. BC, i.e.

around 6700-6500 cal. BC (Binder *et al.* 2012). The pressure technique seems to be unknown in the Aegean region during the Late Mesolithic period (Perlès 1990, Sampson 2014), but pressure-flaked “Trapezes” were discovered in the Initial Neolithic phase (7000 cal. BC) of the Franchthi Cave (Perlès *et al.* 2013). At least two possible pressure-flake blades were found in the earliest occupation of Knossos in Crete (Conolly 2008), while in central western Anatolia, pressure technique blades from flint and obsidian were noticed in Çukuriçi XIII and Ulucak VI (Horejs *et al.* 2015). Excavations at Höyücek show that pressure technique was also used around 7000-6500 cal. BC in the Lake District (Balkan-Atlı 2005). In Greece, lever pressure blades were produced from the beginning of the Neolithic, perhaps as early as 6800-6500 cal. BC, i.e. at Argissa (Perlès 2001). According to Pelegrin (2006), the lever pressure mode would have originated in Northeastern Greece and/or Southern Albania.

In the 9<sup>th</sup> millennium Melian obsidian was already widespread in the Aegean and still much later this network connected the early 7<sup>th</sup> millennium BC communities (Perlès 2001, Conolly 2008, Horejs *et al.* 2015). Obsidian was used to produce small blades in Uğurlu that were made by the pressure technique. All obsidian from Uğurlu evidently originates from the island of Melos, at a distance of about 400 km from the site. Hence, the distribution of Melian obsidian and its presence at Uğurlu suggests a mechanism that allowed long-distance exchange.

The earliest known lime plaster pyrotechnology of Western Anatolia was identified at Girmeler, and it is dated to the late 9<sup>th</sup> millennium BC (Takaoğlu *et al.* 2015). Lime plaster pyrotechnology dates to around 12000 cal. BC in the Levant, although floors made of lime plaster are not recorded in the Middle East until 9000 cal. BC (Kingery *et al.* 1988). Buildings with red lime plastered floors appear to have been one of the main settlement components of the first half of the seventh millennium BC in Western Anatolia. They were discovered at Ulucak VI (Çevik and Abay 2016), Çukuriçi XII (Horejs *et al.* 2015) and in the pottery Neolithic layers at Girmeler (Takaoğlu *et al.* 2015). The lime plaster of Uğurlu was made with small stones and painted red.

Radiocarbon dates from Phase V suggest that occupation between Phase V and VI at Uğurlu continued without a gap. There are some similarities between Uğurlu V pottery and the pottery tradition of the Lake District, and certain finds, such as the figurines, are also similar. Moreover, the radiocarbon dates indicate that the Lake District sites and Uğurlu V are contemporary. The similarities in material culture between the two regions may be explained by the interaction sphere model, which was designed to deal with a wide geographical distribution of material culture. It was defined by Caldwell (1964) as geographically bounded regions involving several distinctive cultures that retain their distinctiveness at the level of subsistence technology and local crafts, but do not share a common set of values, rituals, behaviour, styles and materials. Interaction spheres may exist at different scales, involving small communities within a limited area, or communities of various sizes within a larger geographic region, or long distance interregional transactions. The transactions themselves may be of a strictly commercial nature, such as the exchange of utilitarian goods, or they may be primarily social, in the form of interregional marriage exchanges, kinship rituals or ceremonial reciprocity, or political alliances. Similarities in material culture between two communities can also be explained by the existence of similar past ethnic identities, although different ethnic groups often share the same technologies and styles (Hill 1989).

Uğurlu is one of the earliest sites with evidence of farming and animal husbandry in the Aegean. Archaeological materials and radiocarbon dates confirm the existence of Prepottery Neolithic layers (ca. 6800-6700) there. The present excavations still have not yielded a complete picture of the first half of the seventh millennium BC occupation at Uğurlu, and how it fits into the shadowy pattern provided by the evidence from the broadly contemporary sites of Ulucak, Çukuriçi, Girmeler as well as Knossos. For a better understanding of the beginning of the Neolithic way of life along the Western shores of Anatolia and the Aegean Islands more extensive excavations are needed in the future.

#### ACKNOWLEDGEMENTS

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## INTERPRETING A PROBABLE POTTERY KILN OF THE MIDDLE BRONZE AGE FROM HIRBEMERDON TEPE, SE TURKEY\*

Lorenzo Crescioli and Sergio G. Russo\*\*

### *Abstract*

*The excavations at the site of Hirbemerdon Tepe, in Southeastern Turkey, yielded a very well preserved architectural complex dated to the Middle Bronze Age period (1975-1782 cal. BC) in the northern side of the High Mound. The complex was a multi-functional structure in which both ceremonial and craft specialized sectors were recognized by the archaeologists. Within one of the latter, a room, most probably used as a downdraft pottery kiln, was uncovered.*

*The studies on this type of firing installation in the region at this date are still fragmentary, due to either the lack of archaeological data or scholars' tendency to focus on ceremonial architecture or residential structures. Therefore, a complete regional framework of the development of MBA pottery kilns has not been established yet.*

*The aim of this paper is thus to provide a thorough analysis of the kiln found at Hirbemerdon Tepe by investigating topics related to the pottery production at the site and the firing processes involved. Furthermore, in order to clarify kiln features and their typology during the second millennium BC, a comparison will be provided with other pyro-technological structures discovered at sites in neighbouring regions.*

### INTRODUCTION

The site of Hirbemerdon Tepe is located in the upper Tigris river valley about 100 km southeast of the modern city of Diyarbakır, Turkey. Research performed between 2003 and 2011, i.e. reconnaissance survey, geophysical survey and archaeological excavation<sup>1</sup>, demonstrated that Hirbemerdon Tepe experienced its most relevant occupational phase through the early second millennium BC, the Middle Bronze Age period. During this archaeological phase (Phase IIIB in Hirbemerdon Tepe's internal chronology; Laneri 2014) an architectural complex with ritual and working sectors was built in the northern side of the mound (Laneri 2016: 42-48, and references, figs. 7.8-7.9). The identification of the ritual function of the architectural complex is principally due to the discovery there of ceremonial objects, in particular clay votive plaques that are rarely found in other contemporaneous contexts of the region (Laneri *et al.* 2015). The working sectors, located in the northern and southern sections of the complex, are recognizable by the presence of grinding stones, storage vessels and other tools found still in situ, as well as a likely pottery kiln.

\* We would like to thank Nicola Laneri for his useful comments on an earlier draft.

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<sup>1</sup> See Ur and Hammer 2009, Ur 2011, Hammer 2014 (reconnaissance survey), Laneri 2006 (geophysical survey) Laneri 2005, 2006, 2012, 2013 and Laneri *et al.* 2006, 2008 (archaeological excavations). For a complete reference list, see Laneri 2016: 129-131.



The ceramic assemblage of Hirbemerdon Tepe in Phase IIIB is marked by the presence of the Red Brown Wash Ware (hereafter RBWW) and the Band Painted Ware (hereafter BPW), typical of the contemporary ceramic repertoire of the upper Tigris valley. These wares are probably locally produced (Parker and Dodd 2003; D'Agostino 2012; Laneri *et al.* 2015) and perhaps belong to the same pottery horizon, representing respectively the unpainted and painted typologies (Laneri *et al.* 2015). Their firing process and the related installations are still unknown in detail, because almost no pottery kilns belonging to this period have been found in the region. The kiln found at Hirbemerdon Tepe was probably used for firing the pottery vessels in these assemblages as well as the votive clay plaques and the other clay objects. The technological and architectural features of this facility include a bench where the clay objects would have been placed, the large firing chamber suitable for a number of vessels, and clay objects related to pottery production.<sup>2</sup> Moreover, the pottery kiln is located on top of the mound where the southern sector of the architectural complex is found. This area is characterized by the presence of a large paved street, oriented NE-SW, which divides a series of small rooms to the north and a row of four rooms to the south (Fig. 1), the function of which, except for the kiln, is rather unclear. Unfortunately, the Middle Bronze Age layers were not completely reached in the entire sector, so the overall plan of the area has not been exposed. The presence of the kiln should probably indicate a peripheral area of the complex, even if kilns embedded in the urban pattern are also known in Mesopotamia (Postgate and Moon 1982; Delcroix and Huot 1972).

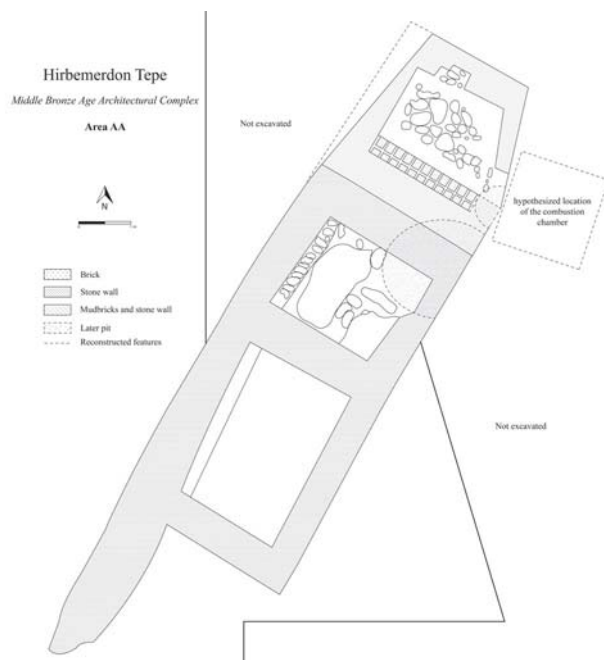


Fig. 1. Plan of the MBA architecture in Area AA.

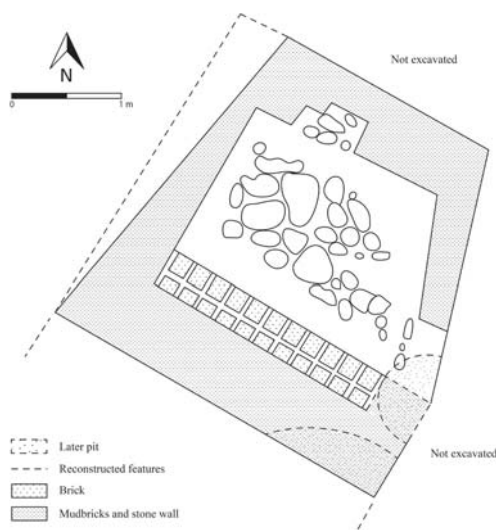


Fig. 2. Plan of the supposed pottery kiln.

<sup>2</sup> Within the MBA levels, wedges, stands, portable hearths and andirons have been found and might be related to the kiln here discussed. See the catalogue listing the objects of this period in Laneri 2016: 481-551.

## THE KILN

The kiln was not fully excavated; only part of the firing chamber has been uncovered: the northwestern and the southeastern walls, in fact, were partially located below the trench baulks and not completely exposed.

Four thick walls consisting of medium-sized foundation stones (0,8-1 m) with superimposed rows of mudbricks (that have been baked during firing) enclose the kiln and still retain a height of about one meter (Fig. 4). The firing chamber has a nearly square ground plan, externally about  $3,35 \times 3,30$  m, whereas the interior size is approximately only  $1,90 \times 2,20$  m (Figs. 2-3). The southwestern wall of the kiln leans against the wall of the adjacent room, creating a thick double-wall between the rooms, an architectural feature extensively used in the MBA architectural complex. The chamber has a single opening in the southeastern side, where traces of a wall built of medium-sized stones have been identified (Fig. 5), and a niche, that served the purpose of the kiln's chimney, is located in the northwestern side. These two elements are located approximately at the opposite sides of the firing chamber in order to facilitate the circulation of the hot air (Cuomo di Caprio 2007: 508-546; Rice 1987: 158-163).

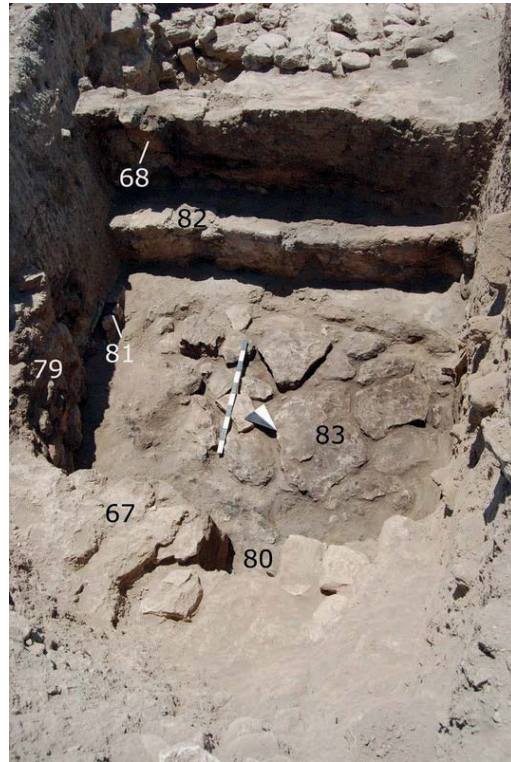


Fig. 3. Kiln viewed from north (after Laneri 2016, fig. 7.43).

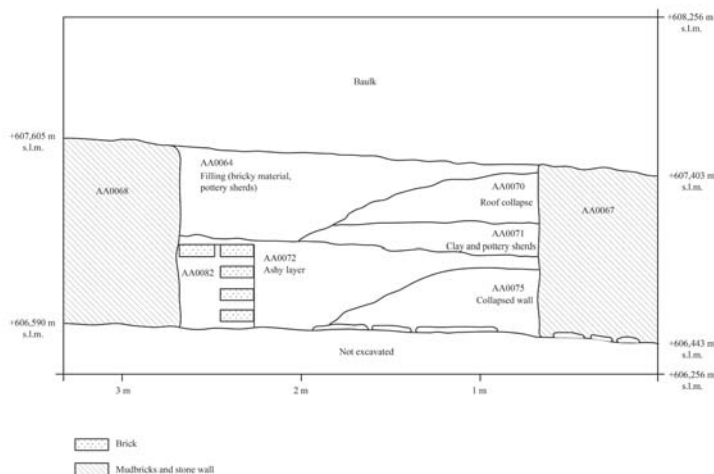


Fig. 4. Pottery kiln: southeastern section.

The absence of a raised and perforated firing floor suggests that it would have been a downdraft (or horizontal) kiln (Fig. 6), with the fuel used for combustion brought into the firing chamber from an eastern room. A bench composed of bricks and compacted clay is located along the southern wall, whereas big-sized flagstones that have been blackened by smoke paved the floor (Fig. 7).



Fig. 5. Detail of the kiln's southeastern corner.

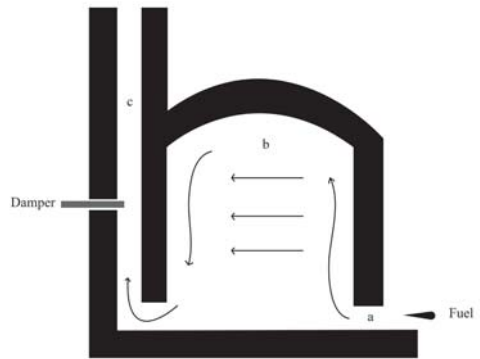


Fig. 6. Schematic drawing of a downdraft kiln: (a) fire hole, (b) firing chamber, (c) chimney.



Fig. 7. Top view of the pottery kiln.

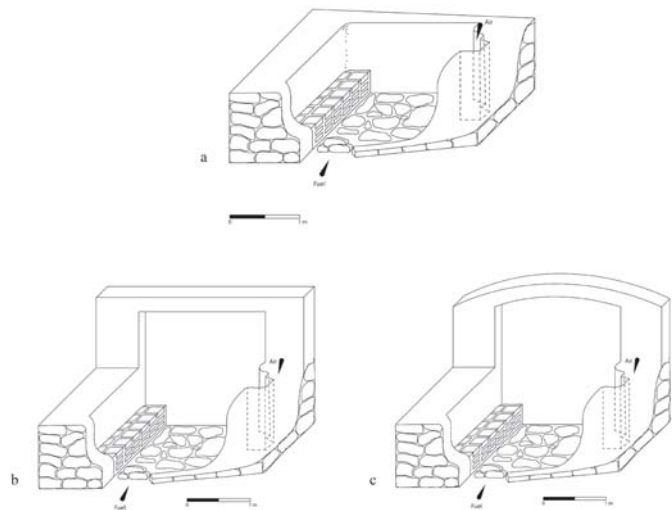


Fig. 8. Hypothetical reconstructions of the kiln: three-dimensional representation of the preserved features (a), supplemented with a flat (b) and a dome-shaped roof (c).

As to the superstructure, nothing allows us to provide any certain information. However, a collapsed layer (loc. AA0070) with clear straw impressions in clay suggests that a compacted clay roof mixed with organic elements covered the kiln (Fig. 8). The presence of jumbled and mixed material (i.e. mudbrick chunks, burnt material, complete bricks, ash, sand and kiln waste; loc. AA0075), covered by a thick ashy layer (loc. AA0072), may be explained as a consequence of structure's collapse.



Fig. 9. Production wastes uncovered within the pottery kiln.

### Pottery assemblage and other findings

In excavating the firing chamber, a large quantity of ceramics and other objects were found within both the ash deposit and the underlying collapsed layer. These findings have helped in dating the

kiln to the site's Phase IIIB, and in interpreting its function. Moreover, almost vitrified scraps were uncovered (Fig. 9) on which petrographic and geo-chemical analysis will be carried out in the future in order to establish the approximate firing temperature.

With regard to the pottery assemblage, 32 sherds were recorded, including 22 rims, four bases, four body sherds and two lids (Appendix 1).<sup>3</sup> They belong to the ceramic repertoire (i.e., RBWW, BPW) representative of the MBA in a regional context.<sup>4</sup> Although it is not certain if they were produced here or discarded after an unexpected firing event, these ceramic pieces share interesting features that have to be stressed. First, traces of burning are evident on the surfaces, suggesting they were inside the chamber during other firing processes. Second, they show a dark core, leading to the conclusion that either large amounts of organic matter were present in the raw clay or a rapid firing process had occurred (Rice 1987: 334-335).<sup>5</sup>

Of particular interest is the discovery of two horseshoe-shaped fragmented examples of andirons (Laneri 2016: 532, pls. CLVIII, 142-143). The exact function of this kind of object is still debated: some scholars interpret them as portable hearths used for cooking food or for ritual activities (Diamant and Rutter 1969; Buccellati 2004; Smogorzewska 2004; Laneri 2016: 113-116). In this kiln's context it is reasonable to think that they were used for supporting the pots during the firing (Aquilano, personal communication).

### COMPARISONS

The knowledge of pottery firing installations of MBA date was, until very recently, sparse in Near-Eastern archaeological studies. This lack of data was principally due to the archaeologists' main interest for examining public buildings, generally located in central areas. Thus, excavators ignored the peripheral sectors in which pottery kilns were usually placed. Which means that despite the way that archaeological research has strongly increased in the upper Ti-

<sup>3</sup> Abbreviations used in the catalogue: Nr.: number of the piece in the plate; HM no.: inventory number; Ware: pottery category; RØ: rim diameter; BØ: base diameter; Th.: thickness; Color: reference to the Munsell Soil Color Chart 2000; Inclusions: sequence from highest to lowest density.

<sup>4</sup> These pottery assemblages have been largely found within the upper Tigris river valley sites (Bartl 2005, 2012; D'Agostino 2012; Kozbe *et al.* 2004; Matney *et al.* 2002, 2003; Ökse and Görmüş 2006; Özfırat 2005; Parker and Dodd 2003).

<sup>5</sup> In the first case, the carbon contained within the raw clay is not completely eliminated by firing, in the form of CO<sub>2</sub> gas. In the second one, pores on the surface close before organic material has burned out.



gris river valley during the last twenty years, thanks to the salvage projects carried out within a broader rescue program (i.e., Ilisu Dam Rescue Project), only a few pyrotechnic installations of Bronze Age date are known so far, and some of these are probably not related to pottery making.<sup>6</sup> Only at Ziyaret Tepe do we have kilns that are related to pottery making. In Operation D, for example, an updraft kiln was found outside the limits of the urban settlement of the second millennium BC. It consisted of a pit excavated in the virgin soil, lined with rough bricks of varying sizes forming the combustion chamber and with a brick column in the middle probably sustaining a perforated firing floor that has not been preserved. The chronology is uncertain but, according to the archaeologists working at the site, it should be dated to the Late Bronze Age (Matney *et al.* 2002). Another LBA updraft double-chambered kiln was found in Operation G. It is square in plan and measures 5 × 2 m. The combustion chamber is built in a pit, which is lined with clay and the perforated grid is composed of at least 14 flues (Matney *et al.* 2005: 29).

Thus, it is necessary to look for typological comparisons in a much wider area regarding both a chronological and a geographical perspective for the kiln belonging to Phase IIIB at Hirbemerdon Tepe.<sup>7</sup> Two examples of above ground, double-chambered updraft kilns dating to the MBA are found along the Euphrates valley in the Gaziantep province at Şaraga Höyük (Ezer 2013). The first has an oval plan (3,5 × 3 m), a combustion chamber of 1,5 m of height made of mudbricks and an opening (kiln door) on the southern side, a perforated firing floor with 15 ducts preserved, while the superstructure is lacking. It is built of mudbricks and the foundation is in stone covered with a layer of packed sherds. All the material is highly vitrified. The second kiln is smaller in size (1 × 1 m): it has a rectangular combustion chamber with an opening on the eastern side and a perforated firing floor with 7 ducts organized in two parallel rows. In the upper Euphrates region, several (19) updraft kilns were found at Lidar Höyük in the so-called “Potter’s quarter” dating to the EBA, where two principal types are found: single chambered horseshoe-shaped kilns, and two chambered kilns, round in plan with long ante-chambers (Hauptmann 1983; 1985; 1987).

Downdraft kilns represent sophisticated and technological facilities, more developed than updraft kilns. Moreover, even if they are rare among ancient Near Eastern communities, they are found starting from the Neolithic and Chalcolithic periods in Iran, northern and central Mesopotamia, for example in Level II at Tell Abada (Diyala river) (Jasim 1985) and at Telul eth Thalathat (Fukai *et al.* 1970; Alizadeh 1985).<sup>8</sup> Noteworthy is the single-chambered kiln

<sup>6</sup> For example, at Kenan Tepe, a circular mudbrick oven dated back to the Ubaid period is recorded (Parker *et al.* 2009: 92). Kilns seem also to have been found at MBA Müslüman-tepe layers, but no more information is provided (Ezer 2013: 6, footnote 23). At Salat Tepe, an oven belonging to Level 2 (MBA) and presenting a slag inner face might be related with a workshop area (Ökse 2014). At Gre Amer, a site along the Garzan Su, the archaeologists hypothesized the presence of pottery kilns belonging to the MBA level. Unfortunately, despite an extensive geophysical survey performed in 2012, no traces of such structures were recognized (Pulhan and Blaylock 2016: 328).

<sup>7</sup> Several kilns dating to the Middle Bronze Age are known from different Mesopotamia regions (northern Mesopotamia, Syria, southern Mesopotamia and Levant) and show various typological and technical features. They are usually double-chambered updraft kiln, with an underground combustion chamber square (2,2 × 2 m) (Tell Halawa-Hamrin Basin) (Orthmann 1989: 55), or circular in plan (2,1 m diameter) (Tell Rijim Northern Iraq). This last example is made of bricks, it is completely plastered, and the two chambers are separated by a perforated screen wall with six ducts (Kolinski 2000: 24).

<sup>8</sup> For a brief overview of the pottery kilns belonging to the Neolithic and Chalcolithic ages, see Streily 2000.



uncovered at level IX of Tepe Ghabristan, in central Iran, located within a potters' workshop; it is rectangular in plan, the mudbrick back wall lies against the wall of the adjacent room and contains a niche, probably used by the potter to check the kiln's inner condition (Majidzadeh 1989). According to Moorey (1994: 157), starting from the third millennium BC, this type is predominant in the Indo-Iranian region and in Central Asia, but in northern and southern Mesopotamia it seems to be rare, since only a single, doubtful example is found at Tell Barri (Pecorella and Pierobon 2004: 15-17). Other firing facilities, similar in structure but probably to be interpreted as baking ovens for food production, have been unearthed at Norşuntepe (Hauptmann 1982) and Tell Bazi (Otto 2006: 223). A possible downdraft kiln of MBA date has been identified at Tell Brak (Oates and McDonald 1997: 21-23), while several examples of Late Bronze Age date have been found at Tell Barri. These are usually single-chambered without an internal partition wall and with circular (2,1 m diameters) (Kiln n. 360) or rectangular plan (2,2 × 2,6 m) (Pecorella 1998; D'Agostino 2012). Another example is a double-chambered kiln (Kiln n. 1446), measuring 3 × 2,8 m and having an opening on the north side and a screen wall in the middle, in order to allow a better distribution of heat in the firing chamber. The reconstructed height is approximately 1,2 m (Pecorella and Pierobon 2008: 53-62). As downdraft kiln typology is at present only common and well recorded at Tell Barri, it is difficult to establish if it is a generally diffused type or a strong tradition typical exclusively of the site during this specific period.

Because of the difficulty in finding exact typological comparisons for the overall shape and structure of the Hirbemerdon Tepe kiln, both in the upper Tigris valley and in a wider geographical context, it is more appropriate to find comparisons for single architectural and structural elements, e.g. squared plan, use of stone, presence of the chimney, and reuse of pre-existing rooms. However, it should be stressed that they could be either related to cultural contacts or more often to autonomous local developments and technical solutions.

As concerns the material used in the construction of the kiln walls, it is important to underline the role of stone, usually utilized as foundation and plastered to avoid cracking or melting with high temperatures (Rye 1981: 100). At Samsat, in the upper Euphrates river valley, a Middle Bronze Age kiln built with a single row of stones was also internally paved with gravels (Özgüç 2009: 68, fig. 317).

Turning to the Anatolian western coast, a Middle Bronze Age pottery kiln has been recovered at Miletus (Raymond 2006: 617, fig. 5). It is of an oval-shaped channel type (firing area of 2,96 m<sup>2</sup>), made of rectangular mudbricks that at the wall base are packed with small stones. Several updraft kilns (at least 8 examples) have been found at Liman Tepe, southwest of the Bay of Izmir. One kiln is dated to the transitional period between EBA and MBA, the others to the LBA. The earlier kiln is poorly preserved; only the lower portion was uncovered. It has a rectangular plan (1,4 × 1,25/1,08 m) oriented NE-SW. The walls are constructed of mudbricks arranged on top of middle and large sized stones. The bottom of the combustion chamber is plastered with clay; in the middle it shows a badly preserved support for the firing floor (i.e., 1,4 m long and 0,22 m wide, Aykurt and Erkanal 2016). In the same region, at Kocabasitepe, a horseshoe-shaped kiln built of small stones with a mudbrick superstructure comes from the middle-to-late MBA levels (Özkan and Erkanal 1999: 137-138, fig. 40). A typology categorization has been applied by Evelyn (2000: 298-311) to the Cretan channel kilns of

Bronze Age date: she distinguished a 'Type 1', hemispherical or horseshoe-shaped kilns, from a 'Type 2', identified by an oval shape and longer flue. In particular, two kilns are known from Haghia Triada (Di Vita *et al.* 1984: fig. 277; Tomasello 1996) and Kommos (Shaw *et al.* 2001), both dated to the mid-second millennium BC and constructed with limestone walls and clay upper sections. While the first one is characterised by two chambers and a rectangular shape, the example of Kommos has a roughly oval firing pit with channel radiating out of it (Shaw *et al.* 1997, pl. CXVII: b).

Finally, of great interest are the examples dated back to the Middle Bronze Age from the Levant, where several kilns were not only built with stone and mud (e.g., at Tell Qasileh: Ayalon 1988), but hewn into the kurkar stone bedrock (e.g., Tell Michal, Ramat Aviv, Tell Ferishe: Kletter and Gorzalczy 2001).

The use of chimneys in the earlier period has not been thoroughly investigated. Only two examples from Kenan Tepe, in the upper Tigris region (Parker *et al.* 2009), and from Tell Ghabristan, in Iran (Streily 2000) have been documented. In the first case, archaeologists recognized an internal niche within a thick wall structure that contained an oven as the location for the chimney, while in the Iranian example the presence of a niche probably used by the potter to observe the inner conditions of the kiln was noted.

The re-use of a pre-existing room or structure represents an exceptionally rare case in the kiln construction records, due to the short life of this kind of structure, which usually deteriorated quickly to be rebuilt nearby, in areas with strong craft vocation. Just one example similar to the facility of Hirbemerdon Tepe has been found at the Mycenaean site of Tiryns, in Argolis (Greece) (Prillwitz and Hein 2015). This updraft pottery kiln, dated back to the Late Helladic IIIC period (end of the second millennium BC), is rectangular and was built re-using the walls of the early Lower Citadel that perhaps were later lined with clay.

## DISCUSSION

The decision to locate a pottery kiln on top of the high mound in a peripheral area probably was necessary to avoid the smoke pollution related to the firing process. As has been shown in a recent study, in southeastern Anatolia the surface wind streams blow mostly towards east/north-east (Sahin and Türkeş 2013). In the case of Hirbemerdon Tepe, this means that the fumes from the kiln might be directed towards the Tigris river, thereby not affecting the northern and southern slopes of the mound. This is also apparently confirmed by the location of the structures in this area: the northern street and the presumed combustion chamber in the southeastern corner let us hypothesize that the kiln's entrance and associated production facilities were located in the uncontaminated south sector.

Technologically the use of stones in the kiln construction is rather unusual, because the stones could react badly to very high temperatures or direct contact with flames. They could crack, crumble, melt or even explode. In addition, stones are rarely used to build kilns, even if there are some examples both in central (e.g., level VI 1b at Arslantepe, early third millennium BC) and in western Anatolia (e.g., MBA levels at Miletus and Kocabas̄tepe), or at least where the raw material is abundant (e.g., the Levant). For the case of the kiln of Hirbemerdon

Tepe, it seems reasonable to assume that the stone walls were plastered and protected to avoid such drawbacks. If the room was modified to be a kiln, the people involved in the construction decided to take advantage of the pre-existing walls in order to save both time and building materials, as is confirmed by the example unearthed at Tiryns in Greece. Supporting elements for this interesting issue are 1) the unusual kind of walls built with stones, very similar to those in other structures found at Hirbemerdon Tepe during the MBA, 2) the perfect fit of this room in relationship with the other nearby rooms of the sector, and 3) the presence of a door socket near the chimney, which could be an ancient doorway sealed in a later phase. Perhaps also a threshold is located corresponding to the southern opening of the firing chamber, even if the exact plan of this spot is not clear because it had been partially disturbed by a later pit and it has not been fully excavated. At the same time, the choice of re-using an already existing room for such advanced pottery firing system does not fit very well with the high technological level required to manage a downdraft kiln. It can be assumed that for a perfect functioning and an optimal draft, precise relationships between some parameters like volume, dimensions, materials, shape etc. should be maintained.

As concerns the firing process itself, despite the poor conditions of the preserved portions of the kiln, and the lack of an upper section that probably collapsed into the kiln, it is possible to reconstruct the different steps involved. First, sun-dried objects and vessels would have been placed in the chamber, probably using the range of supports – portable hearts, andirons, wedges and stands, found in a considerable quantity at the site<sup>9</sup> – in order to avoid direct contact of the vessels with the kiln floor. Given the unknown plan of the combustion chamber, it is hard to establish from which side of the kiln the vessels were brought in for firing. Hypotheses can however be advanced: the pots were inserted either from the top, which implies that the covering was mobile or temporary, or from within the combustion chamber.<sup>10</sup> This latter option might fit best with this case, although our knowledge of the combustion chamber is incomplete: no entrances have been recognized along the walls and no traces of support levels have been found. This way, the presence of stones in the walls for holding up the superstructure might explain a permanent flat clay roof used for covering the other rooms of the architectural complex. According to the volume of the firing chamber (ca. 8,5 m<sup>3</sup>), the vessels were probably stacked according to their size. The stack capacity for each firing process could be as many as 500-1000 pots, assuming an ideal height of the upper section of 1,80-2 m.<sup>11</sup>

The presence of the bench within the chamber, unique in its type, might be functional for locating unbaked plaques and perhaps other votive clay objects (e.g., house models, animal and human figurines) that are found ubiquitously in the MBA contexts at Hirbemerdon Tepe (Laneri 2016: 46).<sup>12</sup>

<sup>9</sup> For a detailed description of these fire-related objects uncovered at Hirbemerdon Tepe, see Aquilano in Laneri 2016.

<sup>10</sup> The opening recognized in the southeastern side is circa 1 m in width: perhaps a young person could bring the vessels inside the kiln.

<sup>11</sup> This reconstruction is suggested considering the average size of the pots and the most common shapes found at Hirbemerdon Tepe in this phase of occupation, i.e. carinated bowls and small-to-medium sized jars.

<sup>12</sup> The size of the bench (ca. 40 cm in width) fits well with the average height of the plaques. Furthermore, the discovery of an unfinished plaque near the kiln suggests that the nearby rooms uncovered in the Step Trench AC were used as a production workshop.

Fuel could have been brought into the stack chamber from the above-mentioned opening, where some stone slabs laid vertically possibly blocked flames and fumes. The various components of the thick ashy layer uncovered above the floor, like ash, fragments of mud-bricks, burnt material, pottery sherds and scraps, do not help in understanding the nature of the principal fuel. Anyway, it is possible to suggest the use of wood and charcoal that was easily obtainable, considering the presence of woodland areas in the southern uplands in the vicinity of the settlement (Laneri *et al.* 2015).

The vessels stacked in the chamber were presumably fired in an oxidizing/reducing atmosphere, particularly suited for downdraft kilns. Thus, heated air could circulate in the chamber and flow out only when the chimney passage was opened. This method allowed potters to control the temperature and to minimize loss of heat (Rice 1987: 161). Perhaps a maximum of 900/1000 °C could be reached. At this high temperature, the double (or back-to-back) wall of the southwestern side would be useful to prevent the heat dispersion in the room adjacent to the kiln.

## CONCLUSION

Any attempt to delineate a technical or typological development of pyro-technological facilities, in particular of pottery kilns, is a difficult and problematic task in archaeology. This is partly because so few are known as most of them will be located away from the city centre, in peripheral areas where archaeologists do not usually focus their research. Furthermore, in some cases, as highlighted for the upper Tigris river valley and, more in general, for southeastern Anatolia, the lack of published archaeological data does not allow any reconstruction of a regional framework. This issue becomes even more puzzling when dealing with sophisticated and rare pyro-technological structures, i.e. downdraft kilns, which are found in very few numbers in the prehistoric and protohistoric periods. Therefore, the example unearthed at Hirbemerdon Tepe represents, with its peculiar characteristics, a unique structure within the ancient Near East landscape.

The complexity of the matter is also emphasized by the fact that pottery firing technology does not follow a diachronic development during its history. For example, already in the seventh millennium BC highly technologically developed pottery kilns appeared, even along with simpler typologies (e.g., pit kilns), and at the same site. Moreover, in the following millennia more or less technologically developed pottery firing systems are simultaneously used without any evident typological developments. This heterogeneity should be therefore seen as a result of different factors tightly connected with specific requirements concerning the cultural, social, economic, political, and natural contexts in which the kiln is created and used.

Given its unique structural and functional features, such as the possible reuse of a pre-existing room, the paved floor, the chimney, the stone walls and the square plan, the downdraft kiln uncovered at Hirbemerdon Tepe could be linked both to the main production of ritual paraphernalia (e.g., plaques), unique to as well as typical of this specific site, and to the production of ceramics (e.g., RBWW and BPW) that, however, could take place in a lower technological facility. Building and managing such a multipurpose facility might require extraordinary efforts that should not surprise us if one thinks that artisans and craft specialists here probably focused on the production of ceremonial devices.

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Nr.	HM no.	Ware	Locus	RØ	BØ	Th.	Color outside	Color inside	Color section	Inclusions	Decoration	Other treatments
1	6569	RBW/W	AA0072	30	0	0,5	2.5YR 4/6 red	2.5YR 3/1 dark reddish gray	5YR 5/3 reddish brown; 5YR 4/1 dark gray	medium, chaff; sand, mica	painted, 2.5YR 4/6 red, incised	slip
2	6590	RBW/W	AA0075	18	0	0,7	5YR 5/3 reddish brown	2.5YR 5/6 red	2.5YR 6/6 light red; 7.5YR 6/3 light brown	medium, chaff; sand, mica, grit	painted, 5YR 5/3 reddish brown, 2.5YR 5/6 red	slip
3	6589	RBW/W	AA0075	30	11	1	2.5YR 3/2 dusky red; 2.5YR 4/6 red	2.5YR 3/2 dusky red; 2.5YR 4/6 red	2.5YR 6/4 light reddish brown; 5YR 4/1 dark gray; 2.5YR 5/4 reddish brown	medium, chaff; sand, mica	painted, 2.5YR 3/2 dusky red, 2.5YR 4/6 red	slip
4	6512	RBW/W	AA0071	30	13	0,9	5YR 6/4 light reddish brown; 7.5YR 6/3 light brown	2.5YR 4/3 reddish brown	5YR 5/8 yellowish red; 5YR 4/1 dark gray; 5YR 5/8 yellowish red	medium, chaff; sand, mica, limestone, grit	painted, 5YR 6/4 light reddish brown	slip
5	6563	RBW/W	AA0072	12	0	0,4	2.5YR 6/6 light red; 2.5YR 3/2 dusky red	2.5YR 3/2 dusky red	5YR 5/8 yellowish red; 5YR 4/1 dark gray	medium, chaff; sand, mica, limestone	painted, 2.5YR 3/2 dusky red, incised	slip
6	6513	RBW/W	AA0071	0	0	0,4	2.5YR 4/3 reddish brown	2.5YR 4/3 reddish light red	2.5YR 6/6 light red	medium-fine, sand, limestone, mica	painted, 2.5YR 4/3 reddish brown	slip
7	6607	RBW/W	AA0064	30	0	1,2	7.5YR 5/3 brown; 2.5YR 3/1 dark reddish brown	7.5YR 5/3 brown; 2.5YR 3/1 dark reddish brown	7.5YR 5/3 brown; GLEY1 4/N dark gray; 7.5YR 5/3 brown	medium, sand, mica, limestone, grit		
8	6564	RBW/W	AA0072	13	0	0,5	2.5YR 4/6 red	5YR 5/3 reddish brown; 7.5YR 6/3 light brown	7.5YR 6/3 light brown	medium-fine, sand, mica, grit	painted, 2.5YR 4/6 red, incised	slip
9	6612	RBW/W	AA0064	32	0	0,6	10R 5/6 red	5YR 5/4 reddish brown; 2.5YR 6/6 light red	7.5YR 5/3 brown; 5YR 4/1 dark gray; 7.5YR 5/3 brown	medium, chaff; sand, mica	painted, 10R 5/6 red	slip
10	6591	RBW/W	AA0075	19	0	1,2	5YR 5/3 reddish brown	2.5YR 6/6 light red	5YR 5/8 yellowish red; 5YR 4/1 dark gray	medium, chaff; sand, mica, limestone, grit	painted, 5YR 5/3 reddish brown, incised	slip
11	6516	RBW/W	AA0071	34	0	1,6	2.5YR 4/6 red	2.5YR 4/3 reddish brown; 2.5YR 6/6 light red	2.5YR 5/8 red; 2.5YR 6/8 light red; 2.5Yr 5/8 red	medium, chaff; sand, mica, limestone	painted, 2.5YR 4/6 red	slip
12	6514	RBW/W	AA0071	15	0	0,5	2.5YR 3/2 dusky red	2.5YR 3/2 dusky red	5YR 5/8 yellowish red	medium, chaff; sand, limestone	painted, 2.5YR 3/2 dusky red	slip
13	6565	RBW/W	AA0072	17	0	0,5	5YR 5/3 reddish brown	5YR 5/3 reddish brown	2.5YR 6/4 light reddish brown; 5YR 4/1 dark gray	medium, chaff; sand, mica, grit	painted, 5YR 5/3 reddish brown	slip

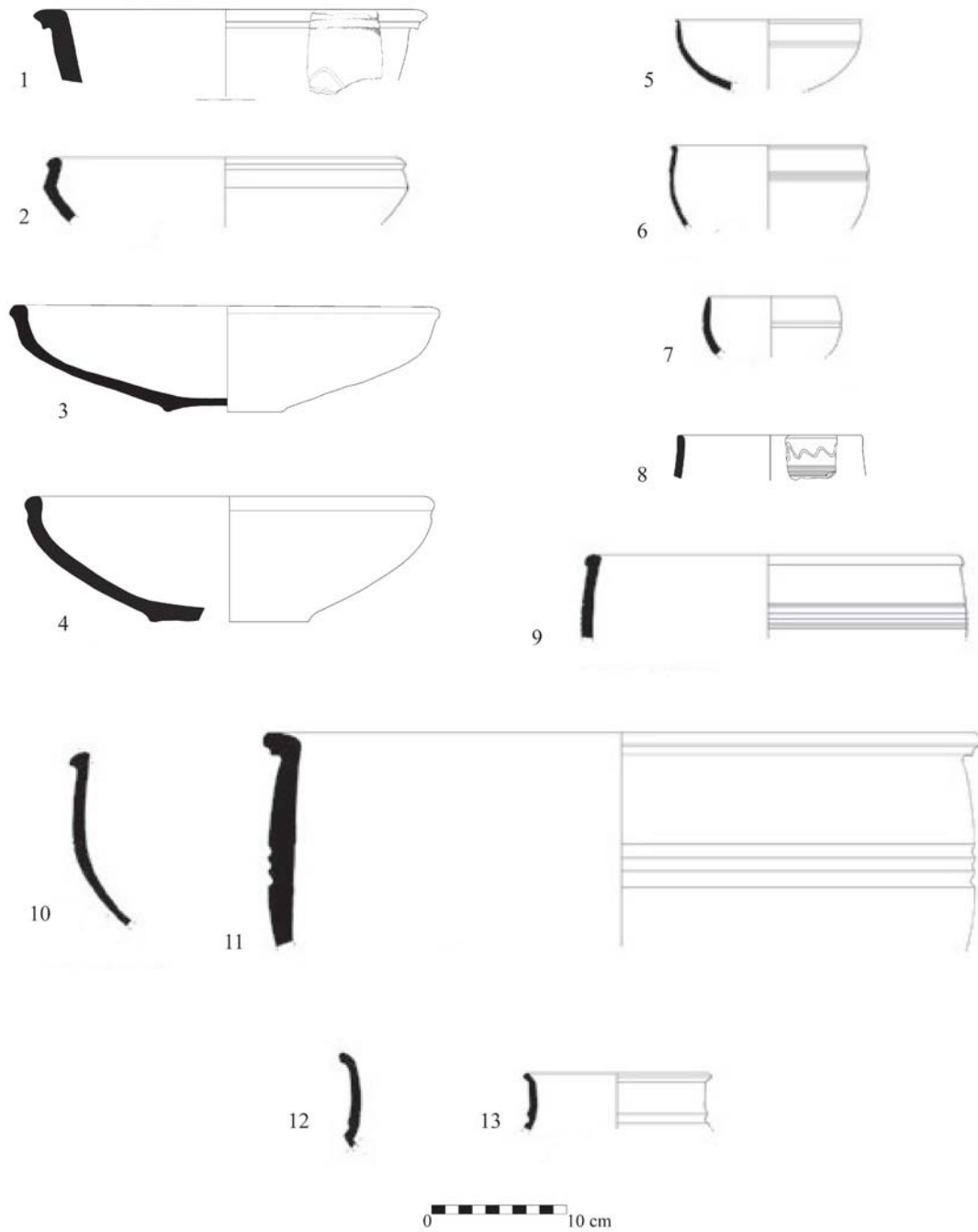


Plate I. Drawings of RBWW sherds found in the pottery kiln.

Nr.	HM no.	Ware	Locus	RØ	BØ	Th.	Color outside	Color inside	Color section	Inclusions	Decoration	Other treatments
14	6615	RBW/W	AA0064	52	0	2	10YR 7/3 very pale brown	2.5YR 6/6 light red	2.5YR 6/6 light red; 5YR 4/1 dark gray; 2.5YR 6/6 light red	medium, chaff; sand, mica, limestone		slip
15	6610	RBW/W	AA0064	34	0	1,5	5YR 5/3 reddish brown	2.5YR 4/6 red; 6/3 light brown	GLEYS 4/N dark gray	medium, chaff; sand, mica, limestone	painted, 5YR 5/3 reddish brown; 2.5YR 4/6 red	slip
16	6572	RBW/W	AA0072	55	0	2,1	2.5YR 6/6 light red	2.5YR 6/6 light red	2.5YR 4/6 red; 5YR 4/1 dark gray	medium, chaff; sand, mica, grit	painted, 2.5YR 4/6 red	slip
17	6614	RBW/W	AA0064	15	0	1	2.5YR 4/6 red	2.5YR 6/6 light red	7.5YR 7/4 pink; 5YR 4/1 dark gray; 7.5YR 7/4 pink	medium, chaff; sand, mica, limestone	painted, 2.5YR 4/6 red	slip
18	6568	RBW/W	AA0072	12	0	0,8	2.5YR 6/6 light red	2.5YR 6/6 light red	2.5YR 6/6 light red; GLEYS 4/N dark gray	medium, chaff; sand, mica, limestone, grit	painted, 2.5YR 4/6 red	slip
19	6519	RBW/W	AA0071	0	0	1,7	2.5YR 4/6 red	10YR 7/2 light gray	2.5YR 7/6 light red; 5YR 4/1 dark gray	medium-fine, sand, limestone, mica	painted, 2.5YR 4/6 red, incised	slip
20	6592	RBW/W	AA0075	0	0	1	2.5YR 3/1 dark reddish gray	10YR 7/3 pale yellow	10YR 5/2 grayish brown; 10YR 6/2 light brownish gray	medium, chaff; sand	painted, 2.5YR 3/1 dark reddish gray	slip
21	6595	RBW/W	AA0075	22	0	0,9	2.5YR 5/6 red	2.5YR 6/6 light red	2.5YR 6/6 light red; 5YR 4/1 dark gray; 2.5YR 6/4 light reddish brown	medium, chaff; sand, mica, grit, limestone	painted, 2.5YR 5/6 red	slip
	6618	RBW/W	AA0064	22	0	1,3	2.5YR 3/1 dark reddish gray; 6/4 reddish brown	2.5YR 6/6 light red	5YR 4/1 dark gray	medium-coarse, chaff; sand, mica, grit	painted, 2.5YR 3/1 dark reddish gray	slip
22	6571	RBW/W	AA0072	0	5,7	0,4	2.5YR 5/4 reddish brown	2.5YR 5/4 reddish brown; 2.5YR 4/6 red	2.5YR 5/4 reddish brown; 5YR 4/1 dark gray	medium, chaff; sand, mica, grit	painted, 2.5YR 4/6 red	slip
23	6611	RBW/W	AA0064	0	20	1,2	10YR 7/2 light gray	5YR 6/6 reddish yellow	5YR 6/6 reddish yellow; 5YR 4/1 red; 5YR 6/6 reddish yellow	medium, chaff; sand, mica, limestone		slip



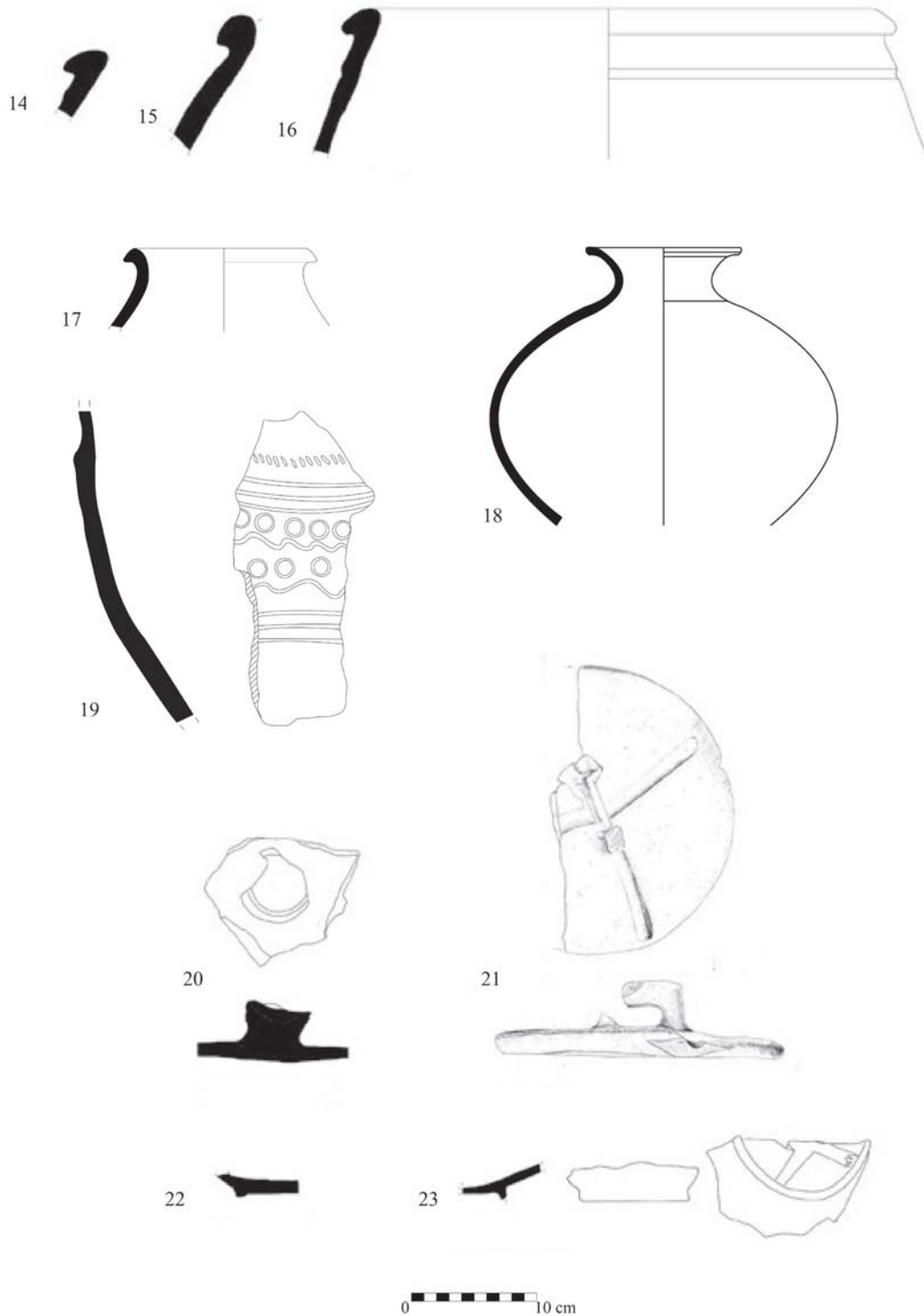


Plate II. Drawings of RBWW sherds found in the pottery kiln.

Nr.	HM no.	Ware	Locus	RØ	BØ	Th.	Color outside	Color inside	Color section	Inclusions	Decoration	Other treatments
24	6570	BPW	AA0072	0	0	1,3	5YR 6/6 reddish yellow; 2.5YR 4/6 red	5YR 5/8 yellowish red	5YR 6/8 yellowish red; 5YR 4/1 dark gray; 5YR 5/8 yellowish red	medium, chaff, sand, mica, grit	painted, 2.5YR 4/6 red	slip
25	6594	BPW	AA0075	0	0	1	2.5YR 4/6 red; 5YR 7/3 pink	2.5YR 6/4 light reddish brown	2.5YR 6/6 light red; 5YR 4/1 dark gray	medium, chaff, sand, mica, limestone	painted, 2.5YR 4/6 red	slip
26	6617	BPW	AA0064	0	0	0,6	5YR 7/3 pink; 2.5YR 3/2 dusky red	2.5YR 6/6 light red	2.5YR 6/6 light red; 5YR 4/1 dark gray; 2.5YR 6/6 light red	medium-fine, sand, mica, limestone, chaff	painted, 2.5YR 3/2 dusky red	slip
27	6515	CW	AA0071	20	0	1,2	7.5YR 5/3 brown; GLEY1 4/N dark gray	7.5YR 5/3 brown; GLEY1 4/N dark gray	GLEY1 4/N dark gray	coarse, sand, mica, grit, limestone		burnished
28	6573	CW	AA0072	21	0	0,9	5YR 4/4 reddish brown	GLEY1 4/N dark gray	GLEY1 4/N dark gray	coarse, sand, mica, grit, limestone		
29	6593	CW	AA0075	22	0	1,2	2.5YR 4/6 red	2.5YR 4/6 red	2.5YR 4/6 red	coarse, sand, mica, grit, limestone		burnished
30	6289	CMW	AA0072	4	3,6	0,6	5YR 6/4 light reddish brown	5YR 6/4 light reddish brown	N/A	medium, chaff, mica, grit, limestone		burnished
31	6608	GW	AA0064	0	11	1,1	GLEY1 4/N dark gray	GLEY1 4/N dark gray	GLEY1 4/N dark gray	medium, chaff, sand, mica		burnished

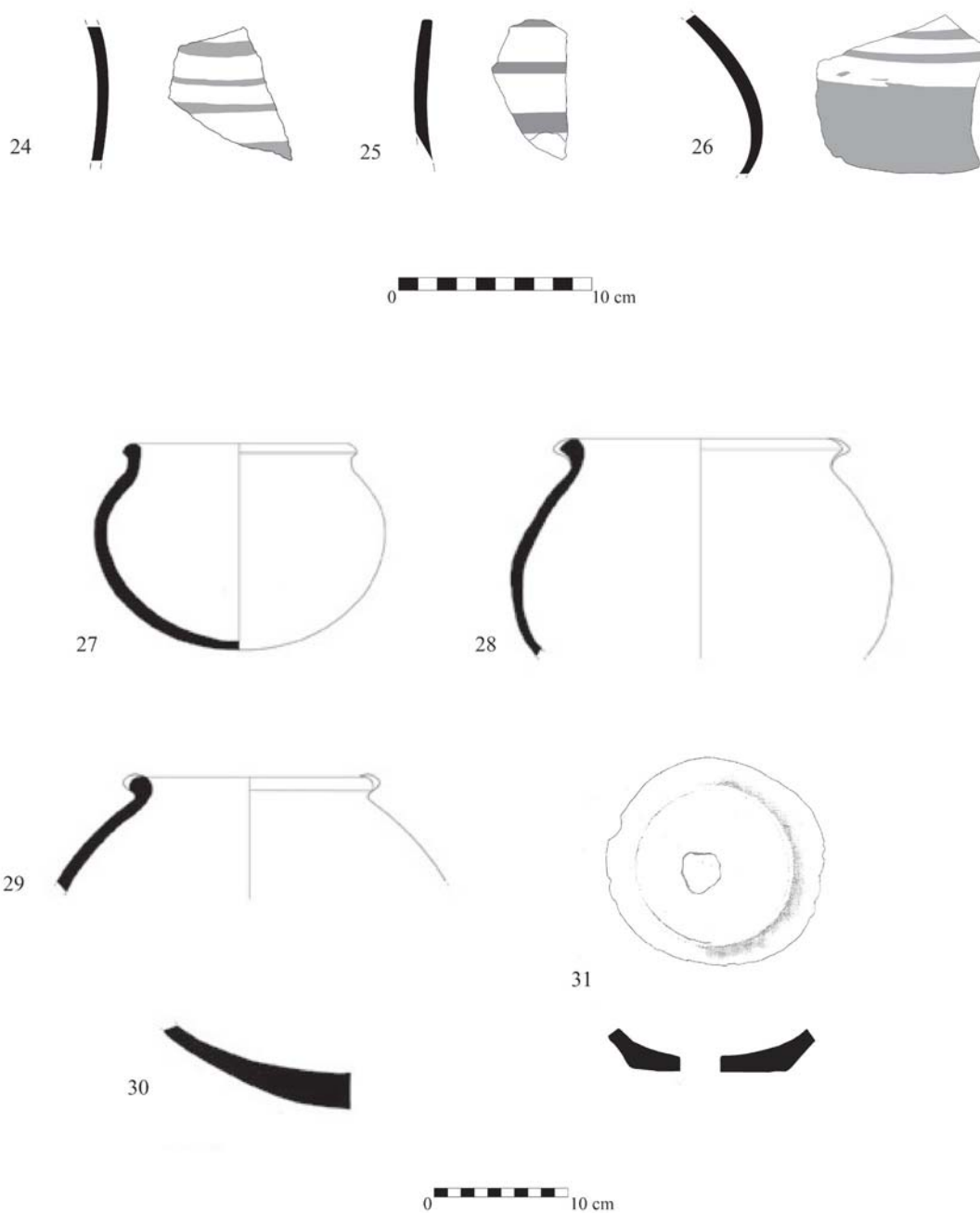


Plate III. Drawings of BPW (24-26), Cooking Ware (27-29), Common Ware (30) and Grey Ware (31) sherds found in the pottery kiln.

## LOWER GÖKSU ARCHAEOLOGICAL SALVAGE SURVEY PROJECT, THE FOURTH SEASON

*Tevfik Emre Şerifoğlu, Naoise Mac Sweeney and Carlo Colantoni\**

### **Abstract**

*The Lower Göksu Archaeological Salvage Survey Project (LGASSP) continued with a short season in 2016; aiming to document more archaeological sites and monuments in the valley before the construction of the Kayratepe Dam (Mersin Province, Southern Turkey). The 2016 season focused mainly on the Kurtsuyu River Basin and the area surrounding the village of Evkağçiftliği, resulting in the discovery of several sites that had not been previously documented. Further investigations were conducted around the multi-period mound of Damtepe, and the Keben Çolakkız rock relief; in order to better understand the relationship of these archaeological sites with their immediate vicinity. This article presents a summary of the results of the field season, followed by discussion of settlement patterns in the valley in the light of these new data. LGASSP is jointly conducted by Bitlis Eren University and the University of Leicester, and is currently funded by the British Academy through a Newton Advanced Fellowship.*

### INTRODUCTION

The Lower Göksu Archaeological Salvage Survey Project (LGASSP) was initiated in 2013, in response to plans for the construction of a hydroelectric dam at Kayratepe that will result in the flooding of large parts of the Göksu Valley (Mersin Province, southern Turkey). Fieldwork continued in 2016 with a season aimed at documenting further archaeological sites and remains before they are submerged beneath the flood lake (Fig. 1). Over the last three years, our team has surveyed much of the valley, recording over thirty sites ranging in date from the Chalcolithic to the Medieval Period. In addition to this extensive surveying, we have also conducted intensive survey at several especially complex sites, in order to understand them better (Şerifoğlu *et al.* 2014; 2015; 2016). This work has allowed us to uncover more about the changing settlements patterns, and to better understand the archaeological landscapes of this part of Turkey. The 2016 season was aimed at furthering our knowledge about the landscape, settlement types, and settlement patterns. The primary focus was on the Kurtsuyu River Basin, adjacent to the escarpment on which the site of Kilise Tepe is located; and the Evkağçiftliği area, where our team discovered the multi-period mound of Damtepe in 2013.

For practical reasons, the 2016 field season was a short one, taking place between 8<sup>th</sup> and 19<sup>th</sup> August 2016 with a smaller team than in previous years. The team included Tevfik Emre Şerifoğlu (director), Carlo Colantoni (field director), Nazlı Evrim Şerifoğlu (fieldwork assistant, illustrator and photographer) and graduate students: Nevra Arslan, Songül Yetişir,

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\* Bitlis Eren University and the University of Leicester.

Şıvan Ayus and Erdoğan Ödük. İsmail Atıcı from the Karaman Museum joined us as the representative of the Ministry of Culture and Tourism of Turkey, and was present during the whole season, actively working with the team.

The 2016 season was devoted to extensive survey. Earlier in the year, we had undertaken detailed evaluations of satellite images and local maps to determine likely sites and zones of ancient human habitation in the valley, focusing on the Kurtsuyu Valley and the vicinity of the Evkağçiftliği Village. During the field season, we visited these site-candidates in order to assess whether there were indeed any archaeological remains at these locations.

The work in the Kurtuyu River Basin commenced after a visit to a hill, just to the north of Kilise Tepe – the only mound that has to date been scientifically excavated in the valley (Postgate and Thomas 2007; Jackson *et al.* 2012; Bouthillier *et al.* 2014). It has often been assumed that the cemetery of Kilise Tepe is located on this hill. Our team came across large numbers of worked stone slab fragments piled up along a track – probably belonging to cist graves or grave stelae – and a few non-diagnostic sherds, some of which may be Hellenistic and later in date (Fig. 2). The visit allowed us to confirm that this hill was indeed used as the necropolis of Kilise Tepe from the Iron Age onwards, and the mound has now been labelled the Kilisetepe Necropolis (LG32). Unfortunately, the graves constructed from these stone slabs were destroyed in the recent past during the process of turning the whole hill into an olive grove.

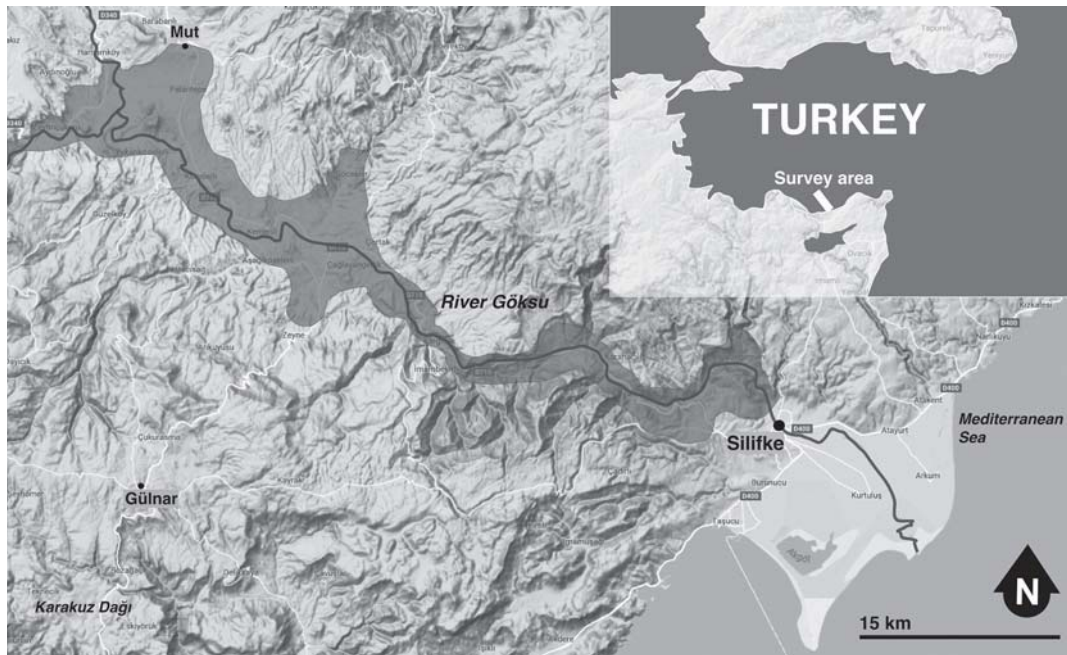


Fig. 1. Map of the Lower Göksu Valley showing the extent and location of the LGASSP project area (map by C. Colantoni; after Google Maps).



A small hillock, lying just below and to the northwest of the Kilise Tepe Necropolis hill, was the next stop for our team before we proceeded into the Kurtseyu Valley. This hillock, which we named Kurtseyutepe (LG33), contained a small number of non-diagnostic sherds and had robber trenches dug into it (Fig. 3). Although few in number, we could provisionally date the sherds to the Byzantine period, when a small farmstead may have existed here, similar to the ones recorded in the same region during the 2014 season (i.e. Köşelerli I, Köşelerli II, Hisartepe and Göcekler-tepe I).

Two site-candidates in the Kurtseyu River Valley were confirmed during the 2016 season as possessing archaeological material. One of these site candidates was Göcekler-tepe II (LG34; Fig. 4). It is located on the western side of the Kurtseyu River just across from Göcekler-tepe I; a site we visited and documented in 2014. Göcekler-tepe II contained a large rock outcrop – an exposure of the valley bedrock – that had a number of natural circular ‘pits’ created by water erosion that had been modified into what seem to be olive or wine presses<sup>1</sup>. The settlement itself was located immediately to the south of the rock outcrop. The sherds collected by our team suggest that the site was most probably first settled during a later phase of the Iron Age, with continuous inhabitation until the Late Roman period when it appears to have been primarily an olive oil or wine production site. In the central part of the site, the remains of stone walls were partially visible. The site itself is under imminent threat of being completely destroyed, due to a modern irrigation project with the construction of a large buried concrete water pipe that passes nearby.



Fig. 2. Dressed stones piled along a track at the Kilise Tepe necropolis (photo by T.E. Şerifoğlu).



Fig. 3. Kurtseyutepe (photo by T.E. Şerifoğlu).

<sup>1</sup> Also evident on this large expanse of exposed bedrock were rectilinearly arranged holes drilled presumably for the erection of wooden posts to support temporary structures.

The second site-candidate that was visited and confirmed to possess archaeological material was Tuğrultepe (LG35), which is located just to the north of the village of Tuğrul (Fig. 5). This mound-type settlement is located on top of a natural ridge, like all the other mounds in the valley. Based on numerous pottery sherds collected from the mound and the flat area to the north, it was mainly settled from the Hellenistic until the Late Roman period. A few sherds, however, hint at the existence of a short-lived Early Bronze Age and perhaps also a later Iron Age settlement at this location (Fig. 6). This site was the most significant discovery of the season, as the Hellenistic and Roman periods are the least understood of all the historical periods documented in the valley.



Fig. 4. Göceklertepe II. Visible is the exposed bedrock that makes up a large part of the site. In the bottom left-hand corner is an example of an apparently naturally created circular hole that may have been employed as a press. A number of these features are to be found distributed across the expanse of exposed bedrock (photos by T.E. Şerifoğlu).



Fig. 5. Tuğrultepe (photo by T.E. Şerifoğlu).

The rest of the season was almost completely devoted to the investigations conducted in the area surrounding the village of Evkafçıftlığı. This was followed by a visit to the Hittite-style rock relief near the village of Keben, around which our team made some observations to better understand the archaeological and geographical context of this monument. Only one site candidate in this area was confirmed as possessing archaeological material. This site was located between the villages of Evkafçıftlığı and Kargıcak, and was assigned the name of Kargıcaktepe (LG31; Fig. 7). This hill lies on a natural ridge, overlooking the Göksu River and the main modern road linking Silifke to Mut, and covered in a low density of poor quality non-diagnostic sherds. Those possible to date suggest occupation during the Late Roman and Byzantine periods. We believe that this site was either a



Fig. 6. Examples of pottery sherds collected at Tuğrultepe (photo by T.E. Şerifoğlu).

mound (discussed in detail below). Once again, this work confirmed that although the mound was first settled during the Early Bronze Age; it only grew significantly in size during the Byzantine period, when a large area surrounding the mound was either inhabited or extensively utilised for agricultural production.

The last task of the 2016 season was to visit the Hittite-style Çolakkız rock relief (LG15), located just above the village of Keben, to investigate the area surrounding the monument. The intention was to better understand its archaeological and geographical context. The stone paved track that links the valley to the higher plateau seems to have been built during the Late Roman period (if not earlier). It was used, with occasional renovations, until the Ottoman era. During the field season, the road was fully mapped, and the areas surrounding the pathway were surveyed to identify archaeological finds and remains (Fig. 8). The surveying around the road was necessarily unsystematic, due to the precipitous nature of the terrain. The team registered the site of Keben Köy (LG15b) that lies spread across a series of terraces on the slopes of a ridge adjacent to the track. Here a number of rock-cut features and tombs were recorded that appear to be Roman and later in date (Fig. 9). The pottery sherds that were collected confirmed this dating. Interestingly, no Bronze Age or Iron Age sherds were found anywhere in the vicinity of the rock relief, implying that the monument was not originally located near a settlement but may have been carved here to mark

small watch-post located at a very strategic location or perhaps another small farmstead, similar to the others we have found from this period (see above). It should be noted that the hills surrounding Kargıcaktepe had numerous terrace walls. These may have been built during the same period, and may thus have been part of the same agricultural complex.

The work in the area surrounding Evkaçifliği continued with a visit to the multi-period mound of Damtepe (LG01) and an intensive survey conducted in the fields on the western side of the



Fig. 7. Kargıcaktepe (photo by T.E. Şerifoğlu).



a route or a boundary. It would not be unreasonable to assume that the pathway was in use during those periods or may even have served the role of a marker of a sacred location, perhaps related to the springs near the village. In close proximity to the Keben Köy site, as the track winds itself down the side of the valley, the team identified a spring (LG15c); now a modern water trough. The associated pottery – unsurprisingly, predominantly jar handles – dates to the same occupation periods as the site.<sup>2</sup>



Fig. 8. View of the ancient track leading to the Keben Çolakkız rock relief (photo by C. Colantoni).



Fig. 9. Documentation of a rock-cut feature at Keben (photo by T.E. Şerifoğlu).

#### THE INVESTIGATIONS AROUND DAMTEPE

Damtepe (LG1) is a multi-period site dating to the Bronze Age and Roman through Byzantine periods (Fig. 10). The site forms the summit of a steep-sided natural hill, on a gently sloping plateau on a ridge on the northern side of the valley overlooking the deep canyon created by the river Göksu. To the east of this small plateau is a narrow but deep ravine, cut by a now seasonal tributary of the river Göksu, and the south and southwest is bound by the steep escarpment of the ridge. To the north is first the main modern Mut-Silifke road and then the modern village of Evkaçiftliği; beyond that the landscape rises into the steep surround hills. These natural boundaries form convenient edges to the gridded survey area laid out in 2016. The site of Evkaçiftliği (LG23), named after the nearby village, lies immediately to the northwest of Damtepe. The tepe and the fields surrounding it are given up to agriculture and olive groves, and it is obviously a productive location. As an area of relatively flat land suitable for agriculture one would presume that it was a favourable zone of ancient human habitation in the valley.

<sup>2</sup> The pathway and its continuation to the spring (LG15c: Keben Pınarı) that lies directly below the ridge on which the site of Keben Köy (LG15b) is located was plotted with GPS. Interestingly, the team identified a notable number of ceramic jar handles believed to be Late Roman and onwards in date strewn along the pathway. These may be related to the collection of water at spring.

The site of Damtepe was identified and registered in 2013 (Şerifoğlu *et al.* 2014: 75). In 2014, the project conducted an unsystematic survey in the fields to its northwest, as part of the investigations around the modern village of Evkaçiftliği (Şerifoğlu *et al.* 2015a: 180-181; Şerifoğlu *et al.* 2015b: 236-237, 240). During this work, the site of Evkaçiftliği (LG23) was identified and the potential extent of the Damtepe settlement complex was first recognized. Evidence of the intensification of land-use was identified for the Hellenistic period, and rapid growth in the Byzantine period saw the occupation extend across the surrounding landscape, with Evkaçiftliği and what appear to be small farmsteads forming parts of this larger settlement complex.

As stated earlier, the aim of these investigations around Damtepe is to better understand the relationship between this multi-period site and its immediate vicinity: contextualizing the tepe in the complex human landscape in which it is and was embedded. The work in 2016



Fig. 10. The fields to the east of Damtepe with the mound in the background (photo by T.E. Şerifoğlu).

was a preliminary investigation in preparation for an extensive systematic survey of the surrounding landscape planned for the summer of 2017. The single transect from the ravine westwards to the eastern slopes of Damtepe also allowed the project to test some of our previous observations concerning potential site candidates; what we believe to be man-made rectilinear landscape features, identified from the analysis of satellite imagery. These ephemeral potential sites are under threat of eradication by intensive agricultural practices.

The use of systematically-walked, gridded transects has long been a part of the project's survey methodology and strategy. It is an intensive survey method that notes and samples all archaeological material, whether ceramics, lithics or artefacts such as roof tiles and stone architectural fragments; and has proven to be a rich source of data for reconstructing the human landscape at other sites in the valley. During the 2015 season, this strategy of gridded and standardised collection units allowed us to identify the extent of the lower towns at Kilise Tepe and Çingentepe (Şerifoğlu *et al.* 2016: 13-16).

The initial east-west transect undertaken in 2016 consisted of 26 units (Zone 17, units 166-191), each of which were contiguous 20x20m squares, collected by a team of 5 surveyors (Fig. 11). This fieldwalking method notes quantities of archaeological material and collects samples; it also takes note of topography and relative levels of artefact visibility (for example,



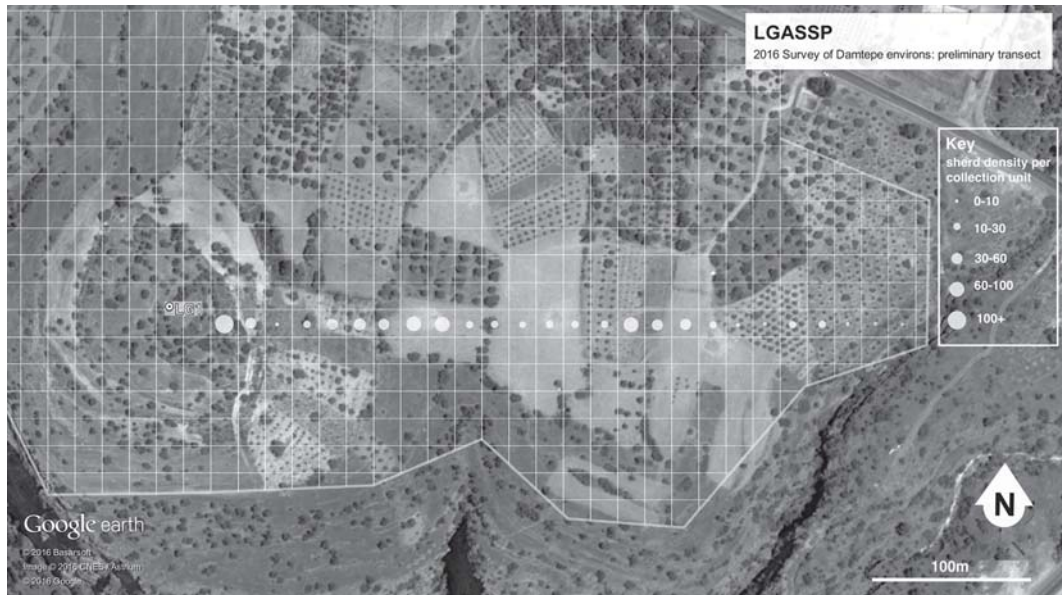


Fig. 11. Sherd densities along the transect walked to the east of Damtepe (map by C. Colantoni; after Google Maps). Visible along the transect are rectangular landscape features (they are darker in tone than the background fields and are surrounded by lighter/reflective soil deposits) believed to be ancient structures.

the type and thickness of vegetation cover). Sherd frequency is counted, and diagnostic sherds are collected for dating. During the summer, when the survey was undertaken, the agricultural fields were fallow allowing a high level of visibility. The density of sherds per collection unit ranged from 1 sherd to 152 sherds (albeit this was a unit located quite far up the eastern slope of the tepe itself, so would have possessed a dense sherd scatter due to occupation). Densities appear to loosely correlate with the possible identified features, with densities rising in association with the features recognized in satellite imagery as potential ancient settlement (these may perhaps have been farmhouses).<sup>3</sup> Density radically declines in the spaces –presumably the ancient agricultural fields – between these points, before rising as the transect climbs up the lower slopes of the tepe. Here there was a mix of dense vegetation and destructive terracing, so the sherd densities in comparison to the plateau could be even higher than recorded.

On the plateau, sherd densities varied, yet there was always a lower ‘background noise’ across the sample. This may reflect a further example of sherd field-scatters due to intensive agricultural practices such as the manuring of fields in the Byzantine period, as discussed in the 2015 report that appeared in this journal (Şerifoğlu *et al.* 2016: 23).

<sup>3</sup> To validate the existence of these landscape features the project will also undertake a resistivity survey in the spring of 2017. The project has undertaken previous resistivity survey at the sites of Attepe and Çingentepe (Şerifoğlu *et al.* 2015: 184-185).

## A VIEW OF THE ARCHAEOLOGICAL LANDSCAPE AFTER THE FOURTH SEASON

During the course of the 2016 season, the team registered a further 7 sites, of which 5 were not previously known. The new data collected this year means that we have further information on which to build our growing understanding of settlement and human occupation in the valley. The most recent distribution of sites recorded by the LGASSP are presented in this article in two maps. For ease of consultation, we have presented pre-Hellenistic sites in Fig. 12, i.e. sites that were occupied in periods up to c. 330 BCE; while in Fig. 13 we present sites occupied from c. 330 BCE onwards. Fuller chronological information for all survey sites is presented in Table 1.

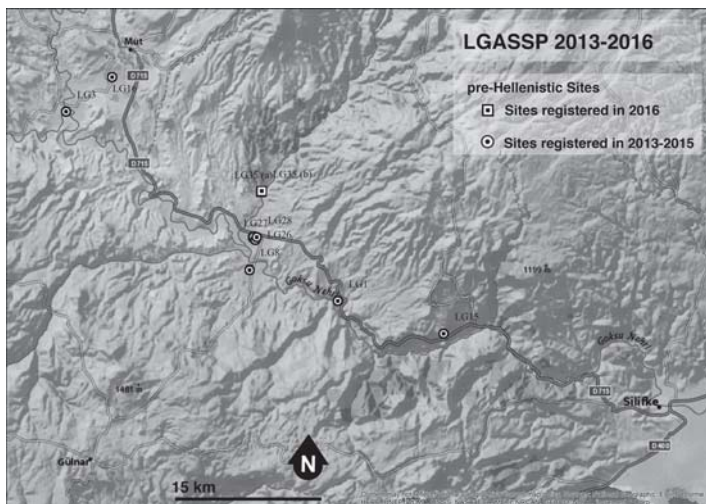


Fig. 12. Map of the Lower Göksu Valley showing all the sites dating to pre-Hellenistic periods recorded by LGASSP as of 2016 (map by C. Colantoni).

The new data from the 2016 season adds some new information, but does not radically alter our understanding of the pre-Hellenistic periods (i.e. pre-330 BCE). The discovery of a necropolis that likely served the Kilise Tepe community during the Byzantine period (LG32) raises the question of cemetery location for earlier periods. Although initial examination has only led to the firm identification of Byzantine ceramics from LG32, a fuller examination of the recorded material

may eventually yield evidence of earlier burials. In particular, it is possible that some of this material dates to the Iron Age. For the moment, however, we have not included the Kilise Tepe Necropolis on our list of pre-Hellenistic sites, and will wait until greater certainty on this point. We can be more confident about adding Göceklertepe II (LG34) to our list of pre-Hellenistic sites. The Iron Age sherds from this upland site will help us to develop a more nuanced picture of the valley during what seems to have been a period of relatively sparse occupation.

Perhaps the most important new discovery this year for our understanding of pre-Hellenistic periods was Tuğrultepe (LG35). Although further analysis may yet identify sherds from later in the Bronze Age, the discovery of Early Bronze material at the site is significant. Tuğrultepe is located on the fringes of the agricultural plain, nestled into the foothills where the plain meets the jagged mountains which gave 'Rough' Cilicia its name. Most other known sites in this period are in central locations on either the northern (Attepe and Örentepe), or the southern alluvial plain (Kilise Tepe and its satellite sites of Çakıltepe, and Çingentepe). These sites were in a prime location to exploit the desirable agricultural land in the valley, and were

Site No. (LG)	Site Name	Chalcolithic	EBA	MBA & LBA	Iron Age	Hellenistic	Roman	Byzantine	Medieval	Post-Medieval
1	Damtepe									
2	Anamurlu Canal									
3	Attepe									
4	Attepe II									
5	Mirahor Building									
6	Görmüttepe									
7	Görmüttepe II									
8	Çingentepe									
9	Maltepe									
10	Maltepe Bridge/Köprüsü									
11	Akkale									
12	Köselerli I									
13	Köselerli II									
14	Hisartepe									
15	Keben Çolakkız/Rock relief									
<b>15b</b>	Keben Köy									
<b>15c</b>	Keben Pınarı									
16	Örentepe									
17	Dağ Camii									
18	Pamuklu Cave									
19	Pamuklu 1									
20	Pamuklu 2									
21	Ardıçlıtepe									
22	Ekşilerkalesi									
23	Evkaftıflığı									
24	Şarlaktepe									
25	Göcekleritepe									
26	Çakıltepe I									
27	Kilise Tepe									
28	Çakıltepe II									
29	Kışla Bridge/Kışla Köprüsü									
<b>30</b>	Çingentepe Pınarı									
<b>31</b>	Kargıaktepe									
<b>32</b>	Kilise Tepe Necropolis									
<b>33</b>	Kurtsuyutepe									
<b>34</b>	Göcekleritepe II									
<b>35</b>	Tuğrultepe									

Table 1. LGASSP 2013-2016. Documented sites and preliminary assignment of settlements to chronological periods: marks represent possible occupation. Sites registered in 2016 are noted with their LG numbers in bold (table by C. Colantoni).

located within easy access of crossing points for the river and the main transit route through the valley. Given this information, we had assumed that population densities were relatively low, so that people were able to use only the very best agricultural land and chose to settle in the most convenient of locations. Until now, the only exception to this rule was the site of Damtepe, which is located on a small plateau further south along the steep river gorge. The site, while some distance from the rich alluvial plains further up the valley, had access to its own cultivatable land on this plateau, and was very well located for the main north-south transit route through the valley. In contrast, Tuğrultepe lies on the edge of an alluvial plain that would have been dominated by a major settlement at Kilise Tepe. The location of a settlement here, in what must have been more marginal land, suggests a larger population than we have hitherto postulated, and a more complex settlement hierarchy. A further point is that Tuğrultepe lies along a route to a geologically distinct zone in the north, which is known to have supplied the inhabitants of Kilise Tepe with stone later in the Bronze Age and Iron Age (c.f. Bouthillier *et al.* 2014: 112-113). It is possible that the location of a settlement at Tuğrultepe may be related to the procurement of these raw materials.

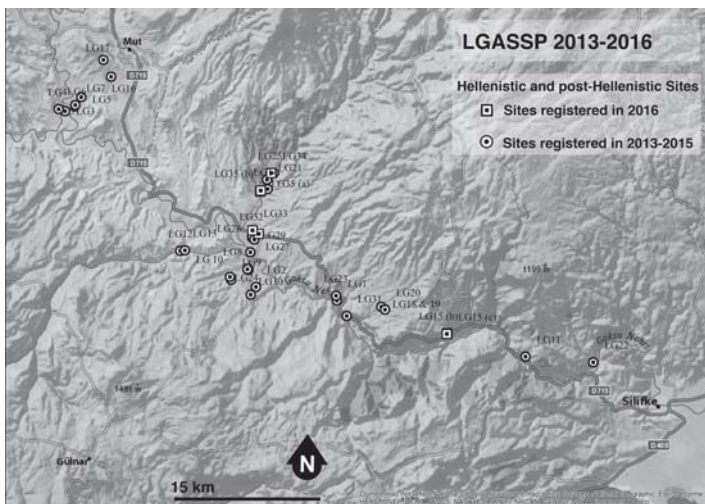


Fig. 13. Map of the Lower Göksu Valley showing all the sites dating to the Hellenistic and post-Hellenistic periods recorded by LGASSP as of 2016 (map by C. Colantoni).

For the period after c. 330 BCE, Tuğrultepe also changes our perspectives. The discovery of Hellenistic and Roman finds from this site is unusual, as these periods often constitute a conspicuous gap in our data (compare, for example, Attepe). We hope that further analysis of the material from Tuğrultepe will add to our understanding of the obscure centuries between c. 300 BCE and c. 500 CE.

But where the 2016 season has perhaps yielded the most significant

new information is in the Late Roman and Byzantine periods, from c.500-1200 CE. The sites recorded before 2016 fall into two main categories (see Şerifoğlu *et al.* 2015b for details): towns (Görmüttepe, Ardiçlıtepe, Attepe, Damtepe, Örentepe, Çingentepe, Dağcamii and Maltepe), some of which were fortified; and farmsteads/fortified posts (Köselerli I and II, Hisartepe, and Göceklertepe). The new data from 2016 adds some new elements to the overall mix. Göceklertepe II (LG34) seems to be a farmstead, similar in many respects to its near neighbour Göceklertepe I. The evidence for olive or wine presses, however, might suggest secondary production on a scale beyond the normal household level. This might indicate more of a range in the size and type of 'farmsteads' than we had previously thought.

The new site of Kargıaktepe (LG31) initially appears to fit our existing categories well. The remains and their location suggest a defensible fortified point, but the ancient terracing on the surrounding hillside suggests that the site was also an agricultural centre, thereby fitting our category of farmstead/fortified post neatly. Its location, however, gives some pause for thought. Within easy striking distance of the village of Keben, it was even closer to the town at Damtepe. It is therefore unclear what the relationship between these different sites may have been.

The Kilise Tepe necropolis also represents a new element in the landscape – a focus of cult and ritual in the landscape that was not a church or a monastery. We hope that further research in the future will allow us to explore the complex ritual landscape of the valley in the Byzantine period.

It is the new discoveries around the village of Keben, however, which most challenge our previous assumptions about this period. The wide sherd scatter suggests a settlement of middling size, somewhere between the upland farmsteads and the lowland towns identified so far. This village was located along an important road, close to a Hittite-style rock relief that would have stood as a landscape marker, and a natural spring. Although more research is needed, we may have the first indications here of a more complex and multi-tiered settlement hierarchy than we originally thought.

## CONCLUSION

The 2016 season produced some interesting results that further enhanced our knowledge of the cultural history of the Lower Göksu Valley, even if it was a short season conducted by a smaller team than in the previous years. Five new archaeological sites were discovered and recorded. Three of these were found by using satellite imagery and topographical maps that allowed us to identify archaeological site-candidates based on geographical and geological features, routes, water sources and modern settlements. These new sites contribute to our study of ancient settlement types and patterns, and how these evolved over time. In addition, the intensive work conducted around Damtepe and the Keben Çolakkız rock relief provided the opportunity to study these archaeological sites within their wider context, and to evaluate their relationship with the landscapes surrounding them.

The Lower Göksu Archaeological Salvage Survey Project is scheduled to continue for at least another year of research, with geophysical work planned in spring 2017 and a major field season scheduled for the summer. It is hoped that this work will allow us to fill in some of the gaps in our current understanding, and to resolve some of the questions that have been raised by our work so far.

In the longer-term future, it would be extremely useful to enlarge the scope of this project, which has necessarily been focused on the lower reaches of the valley and the immediate flood zone. In particular, it will be of great value to be able to situate the data gathered from the valley within its wider geographical context, considering also the mountainous areas surrounding it as far as the Mediterranean coast to the south and the edge of the central Anatolian



plateau to the north. This will enable us to better understand the relationship of the valley with the areas surrounding it, and its role as a transit route linking the Mediterranean coast to the central Anatolian plateau. An enlargement of the project area would also allow us to document archaeological sites and elements of cultural heritage under threat in the other parts of the Taşeli Peninsula that are either to be flooded by the construction of dams or by other planned and ongoing development projects.

#### ACKNOWLEDGEMENTS

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## REFORGING CONNECTIONS: THE BLACK SEA COAST OF ANATOLIA IN THE 4<sup>TH</sup>-3<sup>RD</sup> MILLENNIA BC

Lynn Welton\*

### *Abstract*

*The Black Sea coastal region remains one of the most poorly understood areas of Anatolia. Chronological controversies surrounding the best-excavated site of İkiztepe have resulted in difficulties in interpreting the site's cultural sequence with regard to its place within the larger Anatolian world. While the earlier part of the sequence at this site, located on Mound II (spanning primarily the late 6<sup>th</sup>-5<sup>th</sup> millennia BC), has been widely discussed in terms of its chronology, the Mound I sequence has not received the same attention. This article thus aims to create a chronological framework for the Late Chalcolithic-Early Bronze Age periods in this area of northern Anatolia, by examining the 4<sup>th</sup>-3<sup>rd</sup> millennium sequence excavated on Mound I at the site of İkiztepe.*

### INTRODUCTION: THE ISSUE OF CHRONOLOGY IN CHALCOLITHIC AND BRONZE AGE ANATOLIA

The study of the Chalcolithic and Early Bronze Age in Anatolia has been impacted by a number of long-standing chronological issues that have only recently been recognized and acknowledged. These problems originate from the chronological frameworks that have been employed for interpreting Anatolian sites for more than half a century. Due to the fact that in the Late Chalcolithic and Early Bronze Age I periods, parallels with the Southeast Anatolian, Levantine and Mesopotamian assemblages were difficult to identify (particularly Uruk-related material, until the excavation of Tepecik), the archaeological material cultures of Anatolia during these periods were difficult to pin down chronologically. Özdoğan, who has published a number of commentaries on this subject (1991, 1996, 1997; Özdoğan *et al.* 1991), suggests that archaeologists working in Anatolia were skeptical about the existence of early archaeological material there, and “it was almost taken for granted that the region was uninhabited during the Neolithic period” (Özdoğan 1991: 218). Alişar Höyük, for example, provided a 20m-deep sequence of pre-Middle Bronze Age material, but it was assumed that the earliest material in this sequence was Late Chalcolithic (von der Osten 1937: 30; Özdoğan 1991: 218; Özdoğan *et al.* 1991: 63). This was pushed even later by Orthmann (1963a), who produced a key comprehensive study of early Central Anatolia, and who considered the earliest levels at Alişar Höyük to be EBAI (Orthmann 1963a: 16, 98). Özdoğan notes: “a vague comparison with Kültepe was made and also basal Alişar black burnished pottery was considered to be analogous to East Anatolian Karaz-Khirbet Kerak wares” (1991: 218). These parallels are now recognized to have been erroneous (Özdoğan 1991: 220).

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Indeed, von der Osten's reconstruction of Alişar's chronology has had a lasting impact on the understanding of this time period. His framework, and later Orthmann's, provided the chronological foundation upon which studies of Early Bronze Age Central Anatolia were based for many years. The ultimate effect of this framework was that the long-standing cultural development visible within Chalcolithic Anatolia remained unrecognized, and the existence of assemblages dating prior to the Early Bronze Age was not widely accepted (Özdoğan 1996: 188). However, Schoop (2005a) has pointed out that the reasons for this problem are multiple, and are also related to von der Osten's fundamental assumptions that each stratum at Alişar must represent a distinct cultural block with little internal variation or development, and that the site's sequence must be fundamentally continuous, without interruption. These assumptions led him to reconstruct Alişar's chronology by counting the site's "cultural complexes" backward from known synchronisms with Mesopotamia dating to the Middle Bronze Age (2005a: 66-67). This methodology led to the compression of a long sequence of development at Alişar, an issue that has only been recognized relatively recently.

These arguments are also closely related to the ways in which Anatolian archaeological materials have been related to their counterparts in Southeastern Europe. While parallels between Anatolian assemblages and those of Southeastern Europe had long been noted (i.e. Fewkes 1936), new chronological understandings of the Southeastern European assemblages pushed their dates much earlier. As a result, the parallels noted with Anatolian material were now considered void, as the Anatolian chronology had not undergone a significant shift toward earlier dates (Özdoğan 1991: 218). This created what Renfrew termed the "chronological fault line" between Europe and Anatolia (1979: 103-106). Özdoğan notes that this resulted in most material from phases earlier than the earliest Alişar levels simply being considered as Late Chalcolithic (1991: 219). This included İkiztepe, whose "Late Chalcolithic" remains Özdoğan notes as being "almost identical" to the Veselinovo (Karanovo III) remains from the Balkans (1991: 219), but was dated much later. As a result, the early occupational sequence in Central and Northern Anatolia required reconsideration.

The identification and study of a "Chalcolithic" period in Anatolia is therefore relatively young, and recent reconsiderations of this period have revolutionized our understanding of this period through a series of syntheses aimed at creating robust relative chronologies (particularly Schoop 2005a; but see also Düring 2011; Horejs & Mehofer 2014). The Early Bronze Age, in contrast, despite often being described as relatively well-studied, has been the focus of comparatively little work in terms of synthetic work, particularly in terms of chronology. Although a general chronological terminology is generally agreed upon (a tripartite division into EBI, EBII and EBIII, with EBIII often subdivided into EBIIIa and EBIIIb and sometimes EBIIIc), the exact placement of a number of key sequences and the relative relationships of regional sequences to each other remain contentious.<sup>1</sup>

Within this broader context, assemblages from the region of northern Anatolia in particular have been difficult to place chronologically. In particular, the Black Sea coast of

<sup>1</sup> Note, however, that the aim of the ARCANÉ project is to resolve these issues for the third millennium BC, by correlating regional sequences to form robust relative chronologies anchored with absolute dates (<http://www.arcane.uni-tuebingen.de/welcome.html>).

Anatolia, as one of the most archaeologically under-explored areas of the country, has tended to be left out of major synthetic discussions. The reasons for this are numerous, due to lack of exploration and publication, a variety of chronological controversies, and the idiosyncratic and sometimes divergent cultural trajectories of this region. This contribution will therefore focus on reconstructing the chronology of the Black Sea coastal region of Anatolia during the 4<sup>th</sup>-3<sup>rd</sup> millennia BC, particularly focusing on the best-excavated site of İkiztepe.

#### HISTORY OF ARCHAEOLOGICAL WORK ALONG THE ANATOLIAN BLACK SEA COAST

Archaeological work in the Black Sea region of Anatolia has been limited. The earliest survey conducted in this region dates to the early 1940s, with contemporary excavations at the sites of Dündartepe (Öksürüktepe), Tekeköy and Kavak (Kaledoruğu) (Kökten *et al.* 1945; Özgüç 1948a, b). The excavations at these sites provided the first excavated archaeological evidence for northern Anatolia. In the 1950s, survey of northern Anatolia was conducted by Charles Burney (1956), and small-scale excavations were conducted in the Sinop region at the site of Kocagöz Höyük (Akurgal 1956; Akurgal & Budde 1956; Erzen 1956). Following these excavations, however, northern Anatolia was largely ignored in further archaeological research for more than a decade. In the early 1970s, survey was conducted in the province of Samsun, and in 1974 excavations at the site of İkiztepe first began under the direction of U.B. Alkım. Since his death in 1980, excavations at the site have been continued by Ö. Bilgi and concluded in 2012 (Alkım *et al.* 1988). More recently, work in the coastal region has primarily taken the form of surveys, including work in the Sinop (Işın 1998; Doonan 2004), Cide (Düring & Glatz 2010) and Devrek (Karağuz 2005, 2006; Karağuz & Düring 2009) regions. Excavations also occurred at the site of Yassıkaya, on the southwestern coast of the Black Sea (Efe & Mercan 2002; Efe 2004).

#### Excavations at Dündartepe, Tekeköy and Kavak

The site of Dündartepe (also known as Öksürüktepe) is located about 3km southeast of the modern city of Samsun, on the alluvial plain of the Yeşilirmak River. This site, along with Tekeköy and Kavak, was excavated in 1940-1941 by K. Kökten, and N. and T. Özgüç, but excavations were interrupted by the Second World War and never resumed. When excavations began, the site had already been heavily disturbed by the construction of a railway (Özgüç 1948a: 396). The areas of damage at the site guided the selection of excavation areas, and four trenches were opened in separate locations around the site. These included an area on the summit of the mound (Area B), an undisturbed area on the slope of the mound, an area disturbed by the construction of a railway (known as Area A), and an area located on the slope of the mound facing the modern road (Özgüç 1948a: 397). The material excavated from these four trenches was divided by the excavators into three periods (known as Dündartepe I, II and III), and was dated to the Chalcolithic (or Eneolithic), Copper Age and Hittite Periods respectively (Kökten *et al.* 1945: 367; Özgüç 1948a: 397). These levels, however, were found in different areas of the site, and were never linked together stratigraphically. Furthermore, in none of the excavation areas was virgin soil ever reached.

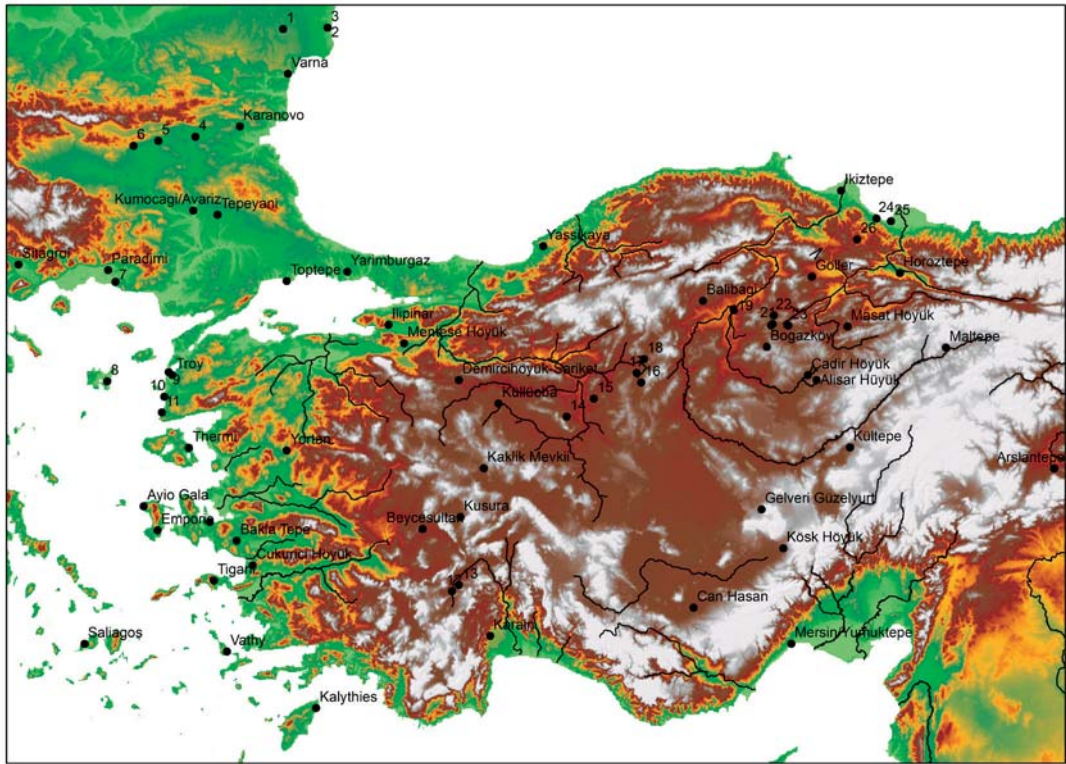


Fig. 1. Map of sites mentioned in the text.

1. Ovcharovo; 2. Durankulak; 3. Cernovoda; 4. Veselinovo; 5. Nova Zagora; 6. Stara Zagora;
7. Kokkinochoma/Proskinites; 8. Poliochni; 9. Kumtepe; 10. Beşiktepe; 11. Gülpınar; 12. Hacilar;
13. Kuruçay; 14. Yazır Höyük; 15. Polatlı; 16. Karaoğlu; 17. Ahlatlıbel; 18. Etiyokuşu; 19. Resuloğlu;
20. Alaca Höyük; 21. Kalinkaya; 22. Büyük Güllücek; 23. Pazarlı; 24. Düdartepe; 25. Tekeköy; 26. Kavak.

The oldest material was found in the area of destruction caused by the railway construction (Area A), in a 5 × 10m trench, as well as in Area G. These levels were dated to the Eneolithic or Chalcolithic period by the excavators (Özgüç 1948a: 398). The pottery from this level is poorly known, and was not found by Thissen during his reanalysis of the pottery; it is described as being black or brown and burnished, occasionally with white-filled decoration (Thissen 1993: n. 16; Kökten *et al.* 1945: 367-369, Pl. LXIII: 1-6).

The remains dated by the excavators to the Copper Age were excavated in two locations: in the trench on the summit of the mound, as well as in the trench on the slope of the mound. On the summit of the mound, a large excavation area was opened (13 × 15m), which was excavated to a depth of 3.8m (Kökten *et al.* 1945: 369; Özgüç 1948a: 399). The ceramic material illustrated in the preliminary report was minimal (Kökten *et al.* 1945: Pl. LXIII: 7-8; LXIV: 1-3; LXV: 1-5), and the pottery illustrations have since been supplemented by Orthmann (1963: Pl. 65 and 66) and Thissen (1993: Fig. 2-6). Thissen describes the pottery from the summit area in detail (1993: 213-215). The pottery is generally mineral-tempered, which occurs along with shell and/or chaff temper. Forms include sharply carinated bowls



(Thissen 1993, Fig. 2: 1-6, 3: 1-8), open simple bowls (Thissen 1993, Fig. 4: 1-3, 5: 4-5), and holemouth jars (Thissen 1993, Fig. 4: 5, Fig. 5: 1-2); upturned lugs were also often found (Thissen 1993, Fig. 4: 5). The ceramics were often burnished, and some were black or brown throughout, while some possessed black exteriors and reddish-brown interiors. Decoration is in the form of incised lines in geometric patterns, including herringbone patterns, chevrons and zigzags (Thissen 1993, Fig. 2: 1-6). In some cases, the incisions have a whitish slip or wash in and around them. Painting also occurs in the form of bundles of thin parallel dilute white lines, with the bundles lying obliquely to and crossing each other (Thissen 1993, Fig. 4: 1-5, Fig. 5: 1-3). The paint was applied after burnishing but before firing. This painted decoration occurs only on the exterior of the vessel, and most often occurs on slightly restricted bowl forms. The white painted pottery was confined to the trench on the summit of the mound, while the pottery found in the trench excavated on the slope of the mound displayed a different corpus of forms, and grooved decoration (Özgüç 1948a: 399-401; Thissen 1993: 212).

While the excavators recognized that the 'Copper Age' material originating from each of these areas were significantly different from each other, they still placed the levels contemporary with each other, with the differences explained as representing the co-habitation of the mound by different cultural groups (Kökten *et al.* 1945). Orthmann, although recognizing the problem, also tentatively decided them to be contemporary (1963: 74). There is no good reason to indicate that these two assemblages are, in fact, contemporary with each other, an idea first suggested by Thissen (1993: 212). His reanalysis suggests that the pottery from the area on the slope of the mound is consistent with the 'Copper Age' (i.e. EB II-III) date originally assigned to it, displaying similarities to İkiztepe I/Sounding A (see further discussion below, Mound I, Phases 4-6), Kavak, Alaca Höyük, Pazarlı, Horoztepe, Ahlatlıbel, Etiyokuşu, Polatlı, and Karaoğlan (Thissen 1993: 212). In contrast, Thissen suggests that the material from the summit of the mound should instead be dated to the Late Chalcolithic period in the late 4<sup>th</sup> millennium (1993: 212).

The site of Tekeköy is located in the Çarşamba Plain, to the east of Samsun, and is a flat settlement. A single 11 × 7m trench was opened, which first produced remains dating to the Hittite period (Kökten *et al.* 1945: 383-384; Özgüç 1948a: 408). Below this, levels dating to the Early Bronze Age were uncovered in a deposit more than 1.5m thick, followed by a 4m thick deposit containing graves dating to the Copper Age, which rested upon virgin soil (Kökten *et al.* 1945: 384-386; Özgüç 1948a: 408). The graves were simple pit burials, with the bodies placed in a contracted or semi-contracted position, with grave goods including metal weapons such as daggers (Kökten *et al.* 1945: 385-386; Özgüç 1948a: 409-410). The Copper Age ceramics from both levels were chaff tempered and demonstrate a black exterior surface with a red interior surface, along with grooved and incised decoration (Kökten *et al.* 1945: 386; Özgüç 1948a: 410). The pottery excavated here is similar to the material excavated in the slope area at Düdartepe (Özgüç 1948a: 410), and bears similarities to material from Mound I at İkiztepe (see below, Mound I, Phases 4-6). Thissen, however, suggests that some parallels to the Düdartepe summit material (i.e. late 4<sup>th</sup> millennium BC) also appear at Tekeköy (1993: 214).

The site of Kavak (also known as Kaledoruğu) is located further to the south in the Kavak Plain near the modern town of the same name, on the main road from Amasya to Samsun. The site was small, but high and steep due to its foundation on a natural rocky slope. Three

areas were opened, on the northern and eastern slopes, and on the top of the mound (Özgüç 1948a: 413). The excavations on the slopes both reached bedrock, with remains dating to the Ottoman, Roman-Byzantine and Hittite Periods (Kökten *et al.* 1945: 389; Özgüç 1948a: 413). The Copper Age deposits were 1.5–2 m in thickness, and were divided into two major phases. The lowest level rested on bedrock, suggesting the site was first occupied during the Copper Age. The Copper Age pottery was well burnished, with black exterior and red interior surfaces (Kökten *et al.* 1945: 392; Özgüç 1948a: 415), as observed at Tekeköy and the Düdartepe slope. The pottery was generally decorated with grooves and incisions, occasionally filled with a white paste, although a few examples of white painted decoration also occurred (Özgüç 1948a: 415). Thissen suggests the latter bears similarities to the late 4<sup>th</sup> millennium Düdartepe summit material (1993: 214). Also found at the site were a number of Copper Age graves located in the eastern trench, which were suggested to represent part of an intramural cemetery (Özgüç 1948a: 414). The graves consisted of simple pit burials, with the bodies placed in a crouched position, and grave goods included metal weaponry, such as daggers and shaft-hole axes (Kökten *et al.* 1945: 391; Özgüç 1948a: 414).

### Excavations at İkiztepe

İkiztepe is located approximately 7 km northwest of the modern city of Bafra, and is one of the largest and most intensively excavated sites in northern Anatolia. Today, İkiztepe lies in the Bafra Plain approximately 1.5 km west of the Kızılırmak (Halys) River, and 7 km from the Black Sea coast. Due to alluvial processes, however, its proximity to the coastline has shifted over time, and during the 4<sup>th</sup> and 3<sup>rd</sup> millennia BC, it was likely located immediately on the coast of the Black Sea, as well as on the riverbank (Alkım *et al.* 1988: 145, Akkan 1970: Fig. 6).

Despite the name, which means “twin mounds”, the site in fact consists of four settlement mounds: two large and two small (see Fig. 2). The constantly shifting nature of settlement at the site, which made use of different combinations of the four mounds in different periods, creates a highly complex occupation history, which has been the focus of a great deal of discussion and controversy, particularly with regard to chronology.

The earliest occupation at the site is believed to be located on Mound II, which was founded on virgin soil and was dated to the Late Chalcolithic period by the excavators (Alkım *et al.* 1988; Bilgi 2001: 76–77). This period of occupation has 8 architectural phases with constructions of timber and wattle-and-daub, which are generally grouped together into one level (Mound II, Level III<sup>2</sup>; see Welton 2010: Table 2.1 for the relative chronology of each mound). This settlement was destroyed in its final phase (Mound II, Level III, Phase 1) and subsequently reoccupied during the EBI (Mound II, Level II) and EBII (Mound II, Level I) (Bilgi 1984b: 96; Alkım *et al.* 1988; Alkım *et al.* 2003). In Level II, 6 sub-phases of EBI material were located (phases 3–8; the Level II phases continued the numbering scheme from the following period).

<sup>2</sup> Periods of occupation at the site will hereafter be labelled in the following format: Mound No., Level No., (Phase No.). Mound No. refers to the numbers of the various mounds at the site, which were numbered from I–IV. Level No. refers to the Level or Stratum on that particular mound, in upper case Roman numerals. Phase No., where included, refers to the phase of occupation within a particular stratum on a particular mound, which were numbered in order of discovery in Arabic numerals.

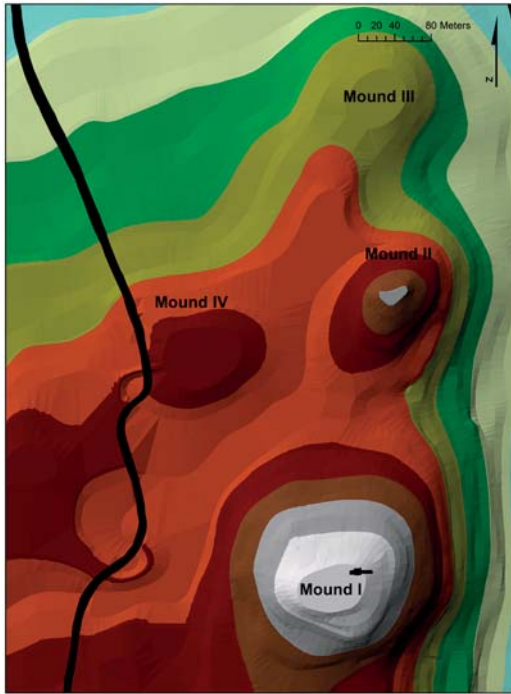


Fig. 2. Plan of the site of İkittepe  
(after Alkım *et al.* 1988: Plan 1).

Only 2 EBII sub-phases were identified on Mound II (Level II, phases 1 and 2), which were the latest remains found on this mound.

The sequence from Mound II has been the focus of the majority of the discussion regarding the chronology of İkittepe, because this sequence has been most comprehensively published in the final excavation reports (Alkım *et al.* 1988, Alkım *et al.* 2003). As this article will focus on the sequence from Mound I, the chronological discussion surrounding the Mound II material will only be summarized briefly here<sup>3</sup>. The earliest material on this mound (Mound II, Level III), originally dated by the excavators to the Late Chalcolithic period, has been one of the most difficult assemblages to place chronologically due to the fact that this material has the fewest obvious parallels. Because the material from the following level (Mound II, Level II) was similar to the earliest material at Alişar, and this assemblage evidently pre-dated it, it was placed by the excavators in the Late Chalcolithic, who relied heavily on Orth-

mann's chronological framework (Orthmann 1963a; Özdoğan 1991: 219). In general, however, most re-assessments of this material would now lean toward a date for this level in the late 6<sup>th</sup> millennium BC (Özdoğan 1991: 219; Parzinger 1993: Beilage 5; Steadman 1995: 17; Schoop 2005a: Beilage 1; Schoop 2011; Martino in prep.). Suggested contemporary assemblages include Ilıpınar V, Yarımburgaz Level 3, the later part of Can Hasan, Hacilar I, Kumtepe A, Tigani Ia-c, Emporio X-VIII, and the Vesselinovo and Karanovo II-III cultures of the Balkans.

The assemblage that directly follows (Mound II, Level II) has much clearer parallels, with strong links to both the Balkans and the Aegean, as well as more limited parallels in central Anatolia. The connections between this material, Alaca Höyük "earlier Chalcolithic" material (i.e. the earliest levels at the site) and Büyük Güllücek were already identified in the preliminary excavation report (Alkım *et al.* 1988: 184-187). Parallels at these sites include jars with horned handles, vessels with carination and incised and grooved decoration, and white painted ceramics. This assemblage has been suggested by multiple scholars to date to the mid-late 5<sup>th</sup> millennium BC (Thissen 1993: 210; Parzinger 1993: Beilage 5; Steadman 1995: 17; Schoop 2005a: Beilage 1; Schoop 2011; Martino in prep.), and finds Anatolian parallels with Büyük Güllücek, Yarımburgaz Level 2, Alişar 19M-15M, the end of Ilıpınar V, Karain II-III, and Gülpınar-Beşiktepe-Sivritepe (Parzinger 1993: Beilage 5; Steadman 1995: 19).

<sup>3</sup> For more intensive discussions of this material, see Thissen 1993, Parzinger 1993a, Steadman 1995, Schoop 2005a, Welton 2010, Martino in prep.

Similarities between these Anatolian assemblages and Aegean sites such as Tigani (II-III) on Samos, Ayio Gala, Emporio X-VIII on Chios, Kalythies on Rhodes and material from Vathy on Kalkimnos have also been recognized (Thissen 1993: 210; Parzinger 1993: Beilage 5; Schoop 2005a: Beilage 1; Martino in prep.). Within the Balkans, the parallels have been more difficult to secure, due to the issues of chronology discussed above. However, parallels with Karanovo IV are now most widely accepted (Steadman 1995; Parzinger 1993; Schoop 2005a; Özdoğan 1991, 1996; Martino in prep.)<sup>4</sup>.

#### THE MOUND I SEQUENCE AT İKIZTEPE

The majority of the reconsiderations of the chronology of İkiztepe have been based solely or primarily on the material published in the first volume of excavation results, published in 1988 (Alkim *et al.* 1988). There has been little significant reconsideration of the material included in the second report (Alkim *et al.* 2003). Furthermore, most reassessments have primarily focused on discussion of the Mound II sequence, as this was the most fully published in the first excavation report. The Mound I sequence has received comparatively little attention, and this discussion will therefore focus on Mound I, including both final excavation reports (Alkim *et al.* 1988, 2003).

Excavations on Mound I involved a series of excavation areas (see Fig. 3). The primary excavation area, opened in 1974 on the summit of the mound (Area A), was expanded in a series of contiguous operations during subsequent seasons (Alkim *et al.* 1988: Plans II, IX, XLVIII). Area A', located to the east of Area A, produced a Hellenistic period dromos tomb, and after this discovery it was not excavated further. Area D, to the west, and Areas H and M, to the north, produced further cemetery remains, expanding the known cemetery area originally discovered in Area A. Area C was also opened in the first excavation season, and was located on the northwest slope of the mound (Alkim *et al.* 1988: Plan II). Two areas were opened in the saddle between Mound I and Mound II (Area F to the west and Area G to the east, see Alkim *et al.* 1988: Plan IX). In 1980, Area K was opened on the north-east slope of the mound, but seems to have been rapidly abandoned (Alkim *et al.* 2003: Pl. LIII).

The earliest occupation on Mound I consists of 5 sub-phases of EBI remains believed to be contemporary to Mound II, Level II (Mound I, Level III, Phases 1-5).<sup>5</sup> Few details about these levels were published, with the exception of the architectural remains, which in-

<sup>4</sup> See Thissen for references and a more detailed list and discussion of parallels to both the Aegean and the Balkans (1993: 210, n. 9).

<sup>5</sup> In the original system of naming the levels on Mound I, the cemetery was assigned no level number. In the most recent publications (i.e. Bilgi 2001), "Mound I, Level II" was assigned to the cemetery, and the earlier layers on Mound I were shifted down accordingly (Mound I, Level III for the EBII remains previously called Level II, and Mound I, Level IV, for the EBI levels previously referred to as Level III). This change in terminology may cause some confusion in referring to the various levels excavated on Mound I, as may the fact that the same names (i.e. Level I, Level II, Level III, etc.) are also applied to materials from the other mounds, despite the fact that they are not contemporary. Here, the levels on Mound I will be referred to by the original nomenclature, where the cemetery has no level number, as this is the terminology used in the majority of the publications on the site and will cause the least confusion.

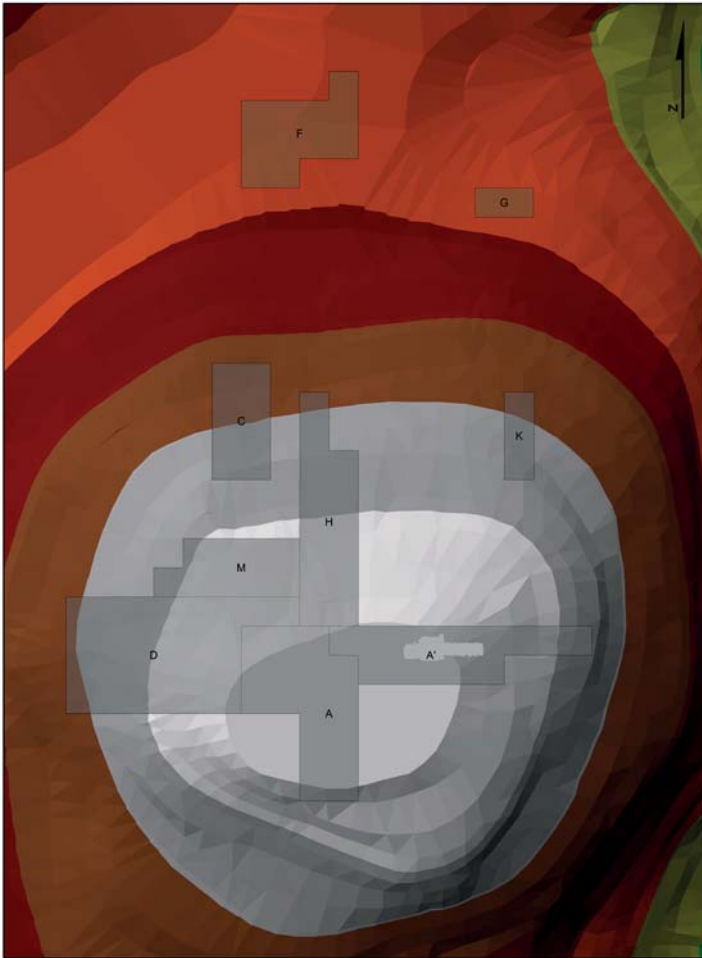


Fig. 3. Excavation areas on Mound I, İkittepe.

of Mound I (Level I) were two separate deposits. The later of these was known as Level IIA, which was located in the southern and eastern parts of Mound I. The earlier of the two was known as IIB, which was located in the northern and western portions of Mound I. Level IIB was originally only found in a deep sounding (Area H) excavated over a small area (Alkim 1981), but excavations continued in this area in later seasons. In the centre of the mound, where the deep sounding conducted during the 1980 season was located, Level IIA was determined to overlie Level IIB (Alkim *et al.* 2003: LV).

Around the end of the EBII or the beginning of the EBIII period at the site, a significant change occurred, with Mound I being converted for use as an extramural cemetery (Bilgi 1984b: 96). The graves of the cemetery were cut into the stratified remains dated to the EBII period (Level IIA). However, a more definitive dating for the cemetery's use based on stratigraphy is difficult, as the graves pits were not noted during excavation, and the depths from which these pits originated are unknown. Following the use of the cemetery, Mound I continued to

clude the burnt remains of buildings constructed from wooden timbers, similar to other constructions at the site (Bilgi 1982b: 50; Bilgi 1982a; Tuna 2009: 31-45).

This sequence continues into the EBII, which was assigned 10 architectural subphases (originally known as Level II, Mound I) (Bilgi 1984b: 96; Bilgi 2001: 76-77). While this level was originally treated as a single unit throughout the first excavation report and much of the second (Alkim *et al.* 1988, 2003), in the final season included in the second excavation report (1980), it was divided into two separate horizons, one partially overlying the other. In the 1980 season of excavation, it was realized that the formation of Mound I was more complex than had originally been understood, and that underlying the upper layers



be occupied in the “Transitional” or “Early Hittite” period, dated to the 21<sup>st</sup>-18<sup>th</sup> centuries BC. On Mound I (Level I), 7 sub-phases were assigned to this period (phases 1-6, with phase 3 being divided into 3a and 3b). These levels consisted primarily of a series of beaten earth floors and pisé architecture (Tuna 2009: 111-113). Some of these levels contain evidence of burning, including the presence of charred wooden crossbeams used in construction (i.e. Level I, phase 6). Beneath the phases of the Transitional Period on Mound I, but above the cemetery, was a layer 0.5-1.0 m thick with carbonized wood and pisé from destruction by fire (Alkim 1981; Alkim *et al.* 2003: 112-113). This layer was referred to in reports as the ‘mixed layer’.

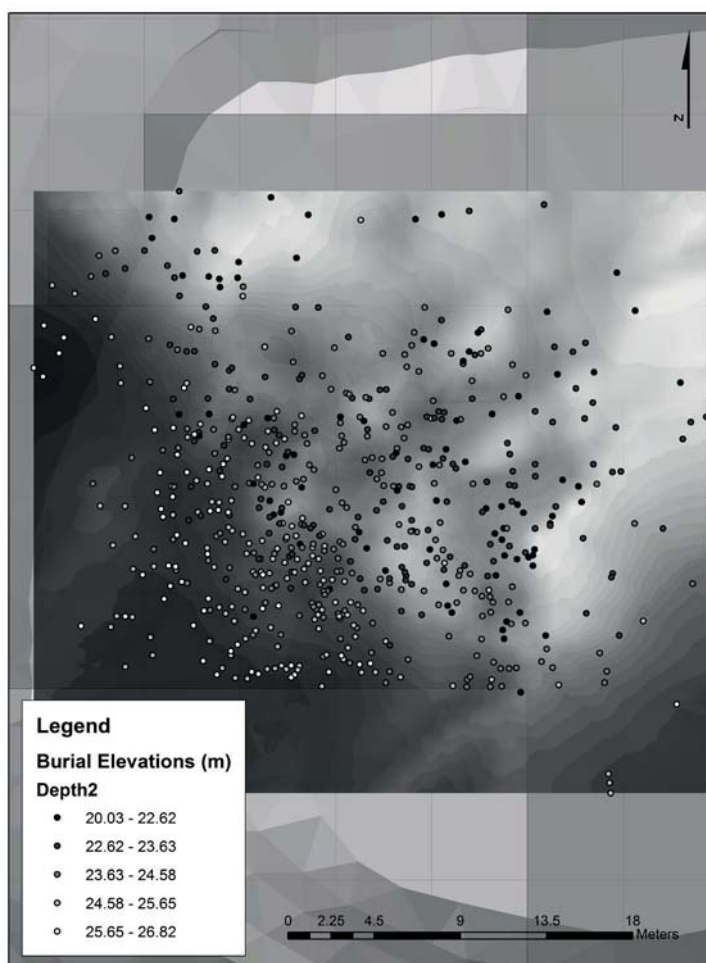


Fig. 4. İkiztepe cemetery and reconstruction of ancient topography.

Following Transitional period, the site was abandoned and does not appear to have been occupied for the remainder of the Bronze Age. The site was re-occupied in the late Iron Age, as well as during the Hellenistic period. The majority of these later remains were concentrated on Mound III, where Level “0” excavations produced Hellenistic and Phrygian pottery (Bilgi 1999a). A dromos tomb dating to the Hellenistic period was found on Mound I, immediately to the east of the EBIII cemetery. In addition, on the northern part of Mound I, ephemeral Hellenistic period remains were found, which may be associated with the construction of the dromos tomb (Bilgi 1984a).

The following discussion will assess in more detail the remains excavated from each of the different levels of Mound I.

## Areas C and F

These areas represent the only parts of the Mound I sequence that have been dealt with by previous reconsiderations of the site's chronology, which focused on the importance of considering Areas C and F separately from the primary excavation areas on the summit of the mound (Area A and related Areas A', D, H, and M; Thissen 1993; Schoop 2005a). Thissen suggested that the materials from Areas C and F are substantially different from those of Area A<sup>6</sup>, and should be considered to pre-date them (1993: 215, 222). This is particularly true of the material from Area C, while there may be some later material mixed in with the assemblage originating from Area F (Thissen 1993: 215).

The northern two squares of Area C, located on the northwest slope of Mound I, produced the burnt remnants of a large pisé wall that appears to encircle Mound I (Alkım *et al.* 1988: 153). To the south of this wall, likely on its interior, are the remains of the north-east corner of a rectilinear structure (Alkım *et al.* 1988: Plan V). The majority of the pottery associated with both of these structures was termed 'Early Bronze Age' by the excavators<sup>7</sup>. They also, however, considered the possibility that the enclosure wall should be dated to the 'Transitional Period' and was constructed on earlier remains (Alkım *et al.* 1988: 154). After the expansion of Area H to the north, which reached its most northerly point in line with Area C, a direct link between this area and the levels on the summit of the mound should have been possible. Unfortunately, no plans of this area are published, and none of the published sections pass through this part of Area H (Alkım *et al.* 2003). These excavations squares seem to have only reached topsoil, but the loci from the northernmost of these squares (i.e. D3/IV 3-5) were assigned to the earliest phases of Level I (Phases 5-6; Alkım *et al.* 2003: 109, 200-203). The pottery from these loci, although sparsely published, seems to represent a mixture of earlier types typical of Phases 4-6 (see below; Alkım *et al.* 2003, Pl. LXXI, 2) and later types more commonly associated with Phases 1-3 (see in particular Alkım *et al.* 2003, Pl. LXVIII; LXIX, 3). Ultimately, the expansion of Area H toward Area C does not particularly help in determining the date of the constructions associated with Area C. However, given the published reconstruction of the formation of Mound I (Alkım *et al.* 2003: Plate XL), it is plausible to believe that excavations in Area C may have passed directly from Level I, into the level designated as IIB, which is found at the northern end of the mound (Alkım *et al.* 2003: LV).

In Schoop's re-evaluation of the pottery, material from Area C, Level II is designated as Complex 'DD' (Schoop 2005a: 314). The pottery from this area consists of approximately equal parts of wares h4 and h5. Ware type h5 did not appear in Sounding B (Mound II), and it occurs only in Areas A and C (Alkım *et al.* 1988: 162). A small number of examples of ware h6 also occur in Area C (Alkım *et al.* 1988: XXII, 4, 8). Forms include small deep bowls or cups

<sup>6</sup> At the time of Thissen's article, only the first excavation report on İkiztepe had been published (Alkım *et al.* 1988), so the designation of the Area C/F material as earlier than the Area A material relates primarily to material from Level I in Area A. The majority of the material from Levels IIA and IIB were published only in the second excavation report (Alkım *et al.* 2003).

<sup>7</sup> In fact, the vast majority of the material from Area C was assigned to Level II. The only excavated locus assigned to Area C, Level I appears to have been b.28, which was a small patch of a beaten earth floor found. The associated published pottery includes only 3 sherds (Alkım *et al.* 1988: II, 3; XX, 3; XXI, 7).

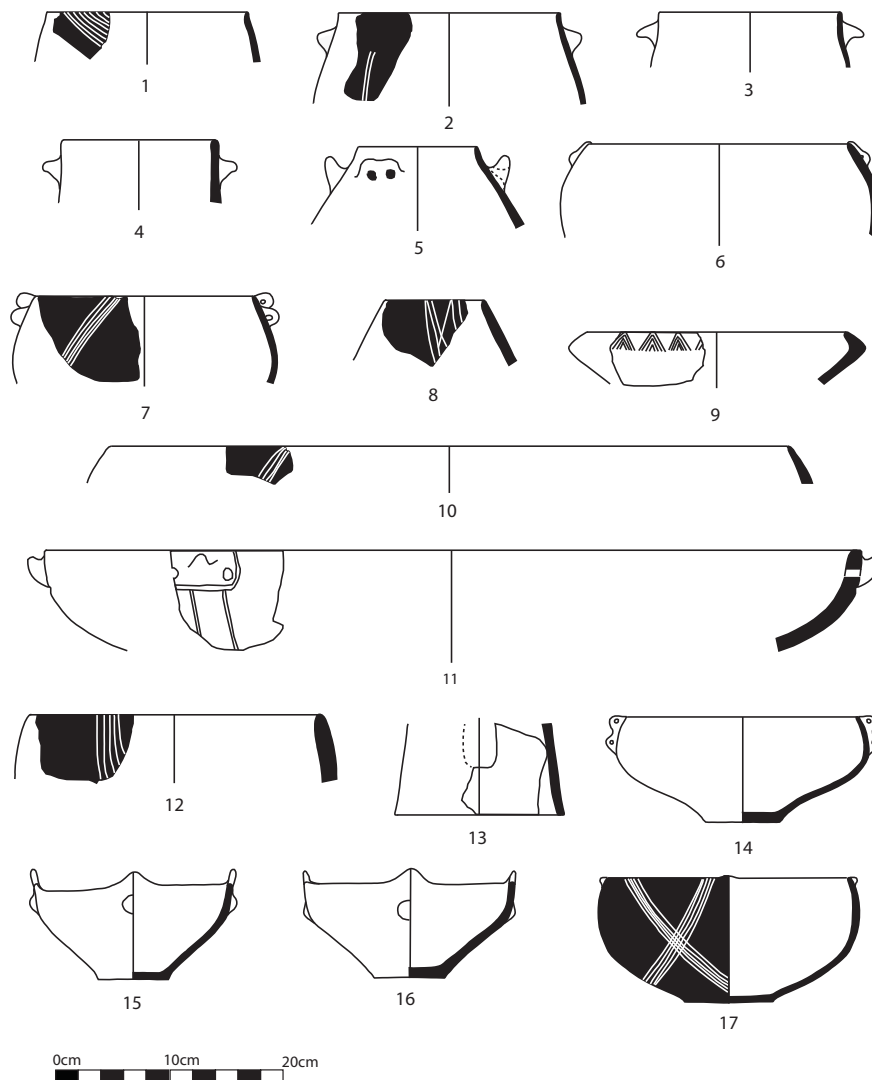


Fig. 5. Ceramics from Areas C and F, Level II (1-7), Mound I, Level IIA (8-10, 13), Mound I, Level IIB (11-12), and Cemetery (14-17).

**1.** Area C, Level II (Alkim *et al.* 1988, Pl. XIII, 6), ware type h.4, findspot 36; **2.** Area C, Level II (Alkim *et al.* 1988, Pl. XIII, 8), ware type h.4, findspot 36; **3.** Area C, Level II (Alkim *et al.* 1988, Pl. XIII, 5), ware type h.4b, findspot 23; **4.** Area C, Level II (Alkim *et al.* 1988, Pl. XIX, 4), ware type h.5d, findspot 36; **5.** Area C, Level II (Alkim *et al.* 1988, Pl. XIX, 9), ware type h.5b, findspot 24; **6.** Area C, Level II (Alkim *et al.* 1988, Pl. XVIII, 5), ware type h.5b, findspot 23; **7.** Area F, Level II (Alkim *et al.* 1988, Pl. XLIX, 3), ware type h.4b, findspot 311; **8.** Level IIA (Alkim *et al.* 2003, Pl. LXXXI, 2), ware type h.5, findspot 1278; **9.** Level IIA (Alkim *et*

*al.* 2003, Pl. LXXXI, 5), ware type h.4, findspot 1126; **10.** Level IIA (Alkim *et al.* 2003, Pl. XLI, 1), ware type h.4b, findspot 888; **11.** Level IIB (Alkim *et al.* 2003, Pl. LXX, 5), findspot 1008; **12.** Level IIB (Alkim *et al.* 2003, Pl. LXXXI, 7), ware type h.5, findspot 1241; **13.** Level IIA (Alkim *et al.* 2003, Pl. LXXXI, 5), ware type h.4, findspot 1254; **14.** Cemetery/SK581 (Bilgi 1990, Fig. 20: 447), findspot 2267; **15.** Cemetery/SK74 (Alkim *et al.* 2003, Pl. LXXX, 1), findspot 1361; **16.** Cemetery/SK71 (Alkim *et al.* 2003, Pl. LXXX, 2), findspot 1358; **17.** Cemetery/SK425 (Bilgi 1990, Fig. 20: 452), findspot 1946.

with straight or curved walls and flat bases (Alkım *et al.* 1988: Pl. XI, 8-11; XII, 2). There are a variety of straight-sided or slightly convex jars or hole mouths, often with lug handles around or just below the rim (see Fig. 5: 2-4; Alkım *et al.* 1988: XIII, 5, 6-8; XIV, 3; XIX, 4, 6-9; XX, 2, 4-5; XXII, 4). Occasionally jars also have more s-shaped convex upper portions (see Fig. 5: 5; Alkım *et al.* 1988: XIX, 6-9). Large deep bowls with inturned rims occur (see Fig. 5: 6; Alkım *et al.* 1988: XVIII, 1-6). Handles include horizontally pierced lugs, most commonly on bowls (see Fig. 5: 6; Alkım *et al.* 1988: XVIII, 3, 5-6), as well as doubly vertically pierced knobs (see Fig. 5: 5; Alkım *et al.* 1988: XIX, 8-9), although vertical handles also occur (Alkım *et al.* 1988: XIII, 7; XXII, 8). Incised and punctate decoration is present in small numbers (Alkım *et al.* 1988: XVIII, 9, 11; XXI, 2), but white painting occurs more commonly in diagonally running lines that can extend to the base of the vessel (see Fig. 5: 1-2; Alkım *et al.* 1988: XIII, 6, 8; XIX, 6; XX, 11; XXI, 3-4). Incised/punctate decoration is primarily associated with s-shaped bowls (Alkım *et al.* 1988: XVIII, 9, 11). The close relationship between this material and the Dündartepe summit material was recognized by Thissen (1993: 213-216).

Area F was located 30m north of Area C, in the saddle between Mounds I and II, and was excavated in 1975. To avoid mixing as a result of erosion, a thick layer of mixed debris was removed from the area prior to beginning stratified excavation (Alkım *et al.* 1988: 197). The first excavated layer (Area F, Level I) contained some poorly defined architectural remains, along with a large proportion of Level I 'Transitional Period' pottery. Below this, some ephemeral pisé architecture was uncovered, along with some 'Early Bronze Age' pottery, forming Area F, Level II. The excavators noted problems with the interpretation of the stratigraphy of Area F, saying that 'Transitional Period' pottery and 'Early Bronze Age' pottery were found at similar depths in adjacent squares within the excavation area (Alkım *et al.* 1988: 200). The conclusion was that this suggested that there was a "continuity of the Early Bronze tradition in the 'Transitional Period', or ... the Early Bronze III people having lived together with the Transitional Period people" (Alkım *et al.* 1988: 200).

In Schoop's reconsideration of the site, this material was designated as Complex 'EE' (Schoop 2005a: 314). Much of the published pottery from Area F is from Level I, which bears strong resemblances to Level I, Phases 1-3 on the summit of the mound, and will be discussed below in the context of these levels. Area F, Level II has a smaller amount of published material, but clearly displays mixing with Level I above it (see, for example; Alkım *et al.* 1988, XLIV, 8-9, XLV, 5; XLVII, 3). Notable, however, are two deep bowls with inturned rims, vertical doubly-perforated knobs and white diagonal painted decoration (see Fig. 5: 7; Alkım *et al.* 1988: XLIX, 3, 5; see also XLIX, 6 without the knobs). These vessels have direct parallels in published vessels from the cemetery remains (see Fig. 5: 14, 17; Bilgi 1990: 167, Fig. 20: 447, 450, 452; see further below). White painted decoration also appears on the exterior of closed holemouth vessels, similar to examples observed in Area C, described above (Alkım *et al.* 1988: LI, 3, 5). Undecorated hole mouths occur here also, sometimes with knobs (Alkım *et al.* 1988: XLIX, 1; LI, 4-5; LII, 6; LIII, 8). A steep walled bowl with a sharply in-turned rim, with incised decoration at the rim, as well as zigzag decoration on the body beneath the carination also appears (Alkım *et al.* 1988: L, 11). This example bears close similarities to examples from the Dündartepe summit (Thissen 1993, Fig. 2: 1-6, 3: 1-7).

The reconstruction of the stratigraphy of Mound I helps to provide an explanation for the differences between Area A and Areas C and F that were first observed by Thissen (1993). It demonstrates that at the northern edge of the mound, the stratigraphic sequence jumps directly from Level I into Level IIB, the earlier of the two portions of Level II. The few pieces of pottery that have been published from Level IIB do not permit a firm conclusion, but are not inconsistent with the pottery from Area C, Level II and Area F, Level II.

These assemblages of Area C, Level II and Area F, Level II are now widely considered contemporary with the material from the summit of the mound at Düdartepe (Thissen 1993: 222; Steadman 1995: 17; Schoop 2005a: Beilage 1). These areas are also linked with the Anatolian assemblages of Alişar 14M-12M, Ilıpınar IV, Alaca Höyük “later Chalcolithic”, Beycesultan “Late Chalcolithic” and Yazır Höyük (Steadman 1995: 17; Thissen 1993: 222; Schoop 2005a: Beilage 1). In the Balkan assemblages, ceramic parallels can be seen in Kodzhardermen-Gumelnitsa-Karanovo VI and late Vinča contexts (Steadman 1995: 22-23; Georgieva 2014: 232-233). However, these parallels are “conceptual”, rather than direct, as there is no “classic” Karanovo VI material at either of these sites (Steadman 1995: 23; Thissen 1993: 217-218). Many of the key features of the Karanovo VI ceramic corpus, including graphite-painted decoration, large lids and strongly angled vessel shapes are not found in the Northern Anatolian assemblages (Thissen 1993: 218).

On the other hand, the parallels to Karanovo VI are not limited to pottery. Thissen cites a number of other specific connections between İkiztepe material and Balkan sites, including baked clay female figurines with pierced ears, which bear similarities to those of Karanovo VI/Gumelnitsa figurines (Thissen 1993: 217; Steadman 1995: 28; see also Alkim *et al.* 1988: 216-218, 225; Martino 2012: Class XIV)<sup>8</sup>. Fragments of similar figurines have also been found at Alişar 14M-12M (von der Osten 1937: 78, Fig. 85; Thissen 1993: 217). The metal finds from the Düdartepe summit have also been suggested to have similarities to examples found at Karanovo VI and the cemetery at Varna (Thissen 1993: 217).

### Mound I, Level IIB

Because the İkiztepe seasonal excavation reports are not always specific about which levels were being excavated in any given season, it is often difficult to ascertain with certainty whether excavations after 1980 were focusing on Level IIA or Level IIB. Although descriptions of the architecture associated with these levels have been published (Tuna 2009: 68-90), comparatively little is known about the material culture related with these levels.

Architecture dating to this level is mostly concentrated on the west slope of Mound I, and consists of a series of wooden buildings, often burned. A number of these constructions were associated with domed ovens, one of which was found in association with large quantities

<sup>8</sup> Despite the fact that Thissen linked this type specifically to Area F (1993: 217), examples of this type in fact originate from a variety of periods, including Area F, Level I (Alkim *et al.* 1988, Pl. LVI, 1, 6, 7, 9, 10), Area G, Level I (Alkim *et al.* 1988, Pl. LVI, 2, 4), Area D, Level II, Phase 3 (Alkim *et al.* 1988, Pl. LVI, 8), Mound I, Level II (Alkim *et al.* 2003, Pl. LXXVI, 1), and Mound I, Level I, Phase 6 (Alkim *et al.* 2003, Pl. XXVI, 3).



of loomweights, leading the excavators to link these remains with textile production (Tuna 2009: 76, Fig. 25; Bilgi 1986: 151, Bilgi 1987: 174).

Very little pottery has been published that can be confidently assigned to this level; published pottery forms from Level IIB include bowls with simple or sharply inturned rims (Alkım *et al.* 2003: LXX, 3, 5), and a mug with a vertical handle (Alkım *et al.* 2003: XLII, 2). These forms all occur in ware type 4b. A black burnished closed bowl or jar with white painted lines and an additional body sherd with white painted decoration in ware h5 (without chaff temper) also occur (see Fig. 5: 12; Alkım *et al.* 2003, Pl. LXXXI, 7-8).

A shallow bowl with a wide diameter and perforations below the rim (see Fig. 5: 11; Alkım *et al.* 2003, Pl. LXX, 5) may represent a so-called cheese pot, which are widely distributed in Greece, the Aegean islands and western Anatolia during the 4<sup>th</sup> millennium (Horejs 2014: Fig. 9, 11; Alram-Stern 2014: Fig. 7).

The appearance of pottery painted with groups of white lines in particular may have chronological significance. As discussed above, white painted pottery was also found in Area C, Level II and Area F, Level II. It also appears on Mound III (Bilgi 1999b: Fig. 4: 2), and in the cemetery (see below). Both Tekeköy and Kavak, as well as the Dündartepe summit assemblage also display similar white painted decoration, often with the red and black surface colouration common at İkiztepe, (Thissen 1993: 213-214).

Thissen distinguishes this type of white painted decoration from that seen on the ceramics encountered on Mound II, Level II (1993: 216), based on its placement on the vessels and the associated corpus of forms, as well as its mutual exclusivity with regard to find context (Thissen 1993: 216). In these contexts, paint is applied in groups of parallel lines to the exterior of closed vessels, in particular closed deep bowls or holemouth jars. Technologically, the painted application is also similar to Dündartepe examples, being applied after burnishing but before firing, which often leaves it poorly preserved and difficult to observe (Alkım *et al.* 1988, 174; Thissen 1993: 214). In contrast, the white-painted decoration of Mound II, Level II is most commonly applied to the interiors of open vessels (e.g., Alkım *et al.* 1988, Pl. XXIV, 5, 10, 14; XXV, 4-11; XXVI, 1-3; XXVII, 1, 3, 6, 15). These decorative types are not entirely mutually exclusive, however, as a few examples from Mound II, Level II, Phases 4-5 may demonstrate painted decoration on both the interiors and the exteriors of closed vessels (Alkım *et al.* 1988, Pl. XXXII: 6, 8, 11, 12).

White painted pottery similar to that observed from Areas C and F, Mound III and Mound I, Level II has also been found in excavations in Eastern Thrace, in two excavations near Edirne (Kumocağı/Avarız and Tepeyanı) (Erdoğu 1995). The pottery in question is well-burnished and often black, but sometimes displays the interior/exterior colour differential observed at İkiztepe and Dündartepe (Erdoğu 1995: 268). The paint, like at İkiztepe and Dündartepe, is applied after burnishing, and appears in the form of groups of thin parallel lines (Erdoğu 1995: 269). Significantly, he notes that with one exception only the external surfaces of the vessels are painted (Erdoğu 1995: 269). Erdoğu recognizes parallels appearing at İkiztepe Mound II, Level II and Mound I, Areas C and F (Erdoğu 1995: 271), as well as from Dündartepe summit (Thissen 1993: Fig. 4: 5 and 5: 2).

Outside of the two sites described by Erdoğan, similar white painted pottery had previously been scarce at sites in Eastern Thrace, with only one sherd found at the site of Toptepe (Özdoğan 1991: Fig. 20: 4; Erdoğan 1995: 270). Based on the Toptepe sherd, Erdoğan dates the pottery found at his sites to the Karanovo IV-Vinca B/C horizon (i.e. the 5<sup>th</sup> millennium BC, equivalent to İkiztepe Mound II, Level II) (Erdoğan 1995: 271).

However, white painted decoration on black burnished pottery is also now well-known in western Anatolia and the Aegean islands during the 4<sup>th</sup> millennium (Horejs 2014: Fig. 9, Tab. 1; Efe & Ay-Efe 2001: 252). Although the associated forms are not always close matches, the decorative techniques bear similarities to those observed at İkiztepe. Thissen also suggested a date for this material in the late 4<sup>th</sup> millennium, with Anatolian parallels at Alişar 14M, Demircihöyük (Ware F), Beycesultan Late Chalcolithic, and Yazır Höyük, as well as Samos Tigani IV in the Aegean (Thissen 1993: 222). Thissen also points out that this type of white painted decoration actually continues into the first quarter of the 3<sup>rd</sup> millennium, at sites like Polatlı, Etiyokuşu, Ahlatlıbel, Asarçık Hüyük, Karaoğlu, Maltepe, Yortan, Troy I, Poliochni, Kusura A and Thermi B (1993: 222-223). In fact, this continuity may explain the persistence of this type of pottery into later levels (see further below).

### Mound I, Level IIA

In contrast to the preceding Level IIB, no architecture has been published that seems to date to Level IIA (Tuna 2009). The associated material culture, however, is somewhat better represented in the publications.

Published forms include wide carinated bowls with a straight sharply-inturned rim, and triangle-shaped incisions around the rim (see Fig. 5: 9; Alkım *et al.* 2003: LXXI, 5), and simple bowls with double knobs around the rim (Alkım *et al.* 2003: LXXI, 7). The former has very close parallels at the Düdartepe summit (Thissen 1993, Pl. Fig. 2: 1-6). Similar forms also appear in the first excavation report, and although at this time Level II had not been divided into IIA and IIB, they likely originate from Level IIA (Alkım *et al.* 1988: XLIX, 4, 8). S-shaped bowls, sometimes with knobs, occur in the same contexts (Alkım *et al.* 1988: XII, 6; L, 2, 6), but become more common in Level I, Phases 4-6 (see below). Closed holmouth forms with straight upper portions (see Fig. 5: 8, 10; Alkım *et al.* 2003: LXXIV, 2; LXXXI, 2, 3; LXXXIII, 2) appear, sometimes with knobs extending above the rim, and sometimes with bundles of white painted lines on the exterior. It has been suggested that the appearance of white-painted ceramics only occurs in the lower levels of the EBII layers on Mound I (i.e. Level IIB), but does not appear in the later EBII levels (i.e. Level IIA; Bilgi 1990: 167). However, one possible example of this type may appear in Level IIA (see Fig. 5: 8; Alkım *et al.* 2003: LXXXI, 2?<sup>9</sup>); similar white painted decoration certainly continues to appear in the cemetery (see further below). The chronological significance of this white painted decoration has been addressed above.

<sup>9</sup> This example has its findspot listed as b.1278; however, based on the list of findspots included in the volume (see p. 204), this number does not appear to have ever been assigned to an excavation locus. Since this example appears with a number of examples from b.1378 (Area D, Level IIA, Phase 2), this may in fact represent a typographical error. Here, this example is interpreted as also originating from b.1378, although this may not be the case.

Anthropomorphic imagery in relief also appears (Alkım *et al.* 2003: Pl. LXXXIII, 2), as well as possible zoomorphic imagery (Alkım *et al.* 2003, Pl. LXXIV: 2). Relief imagery, most often zoomorphic, appears during the Late Neolithic and Early Chalcolithic at sites like Köşk Höyük and Kuruçay (Silistreli 1989; Duru 1994, Pl. 42: 2-12, Pl. 77: 11-12, 16-17), but is more rare in later periods. Anthropomorphic relief imagery in particular is quite rare in Anatolia, but good parallels to the İkiztepe examples can be found in the Precucuteni and Cucuteni cultures (Mantu 1993).

Globular jars with short collars occur (Alkım *et al.* 2003, Pl. LXXXI, 1), with double knobs and incised decoration. Again, similar forms appear in the first excavation report, and can likely be assigned to Level IIA (Alkım *et al.* 1988: XIV, 11; LI, 1; LII, 1, 4, 5, 7, 8). These examples also sometimes have incised decoration, knobs (sometimes perforated), and incised decoration. A simple mug with rounded base and a vertical handle was also found (Alkım *et al.* 1988: LIII, 2). Fenestrated stands (see Fig. 5: 13; Alkım *et al.* 1988: LXXXI, 5), bases with impressed decoration (Alkım *et al.* 2003: LXXXIII, 5), doubly pierced horizontal lugs (Alkım *et al.* 1988: XX, 7) and lids with appliqué knobbed decoration (Alkım *et al.* 2003: LXXXIII, 7) also appear. The fenestrated stands in particular may represent the remains of fruitstands, an important chronological marker in for the Late Chalcolithic period in Anatolia, particularly in the southeast. Fenestrated examples of these fruitstands are rare in Central Anatolia, but do appear in the late 4<sup>th</sup> millennium at sites like Arslantepe in Period VIA (Frangipane 2000, Fig. 5: 2; Palumbi 2008, Fig. 3.15: 15-17; Fig. 3.19: 1) and Tepecik (Palumbi 2008, Fig. 3.27: 12-13), although often in clearly unrelated ware types like Plain Simple Ware. Palumbi suggests a central Anatolian origin for the fruitstand in the red-black burnished tradition, citing parallels at Alaca Höyük, Alişar and Çadır Höyük (2008: 81). Although these do not represent direct parallels, they may be indicative of a general chronological synchronism.

## Cemetery<sup>10</sup>

The cemetery excavated at İkiztepe is one of the largest known in Anatolia, and had produced 685 burials by the end of the 2003 season, containing the remains of at least 720 individuals (Bilgi 2003; 2004; 2005). Further seasons of excavations have produced small numbers of additional graves (Bilgi 2009). With few exceptions, the graves within this cemetery consisted of simple earthen burials, and in the majority of cases, the body was placed on the back with the arms beside the body (Bilgi 1984b, 2003)<sup>11</sup>. Despite the homogeneity observed in burial positions, there was no common orientation evident in the placement of the bodies (Bilgi 1984b: 34).

A major concern for the interpretation of the İkiztepe cemetery relates to the internal chronology and seriation of the burials found within it. Several different levels of burial activity

<sup>10</sup> What follows represents a brief summary of the chronological aspects of the cemetery. A more detailed assessment of the larger context of the cemetery will appear in another article (Welton in prep.). See Welton 2010, 2014 for further discussion of these issues.

<sup>11</sup> The most comprehensive study of the burial practices and cemetery at İkiztepe to date is the doctoral thesis of Nuran Doğan (2006). See also Welton (2010: 106-213, 2014) for additional discussion of the burial practices the İkiztepe cemetery.

could be identified, which was interpreted as suggesting that the cemetery was likely in use for several generations (Bilgi 2003). In fact, the absolute vertical depth of the burials encountered in the cemetery area measured as much as 6.7 m (Bilgi 1984b: 34; Parzinger 1993; Zimmerman 2007). However, plotting the burials with regard to their depth demonstrates that in the southwestern portion of the cemetery, the graves are generally located at higher elevations, while in the northeastern portion of the cemetery, they were found at lower elevations. This pattern is in general disagreement with the modern topography of Mound I in the cemetery's vicinity, which slopes downward toward the southwest. However, this is in agreement with the reconstruction of the ancient topography of the mound, as presented in the second excavation volume (Alkim *et al.* 2003: Plan XL). In this volume, the excavators suggest that Mound I was originally formed of two separate, smaller mounds, one located to the northeast and one to the southwest of the current area of Mound I. The cemetery, then, would seem to have been located on the northeastern (downward) slope of the southwestern of these two mounds (i.e. excavated into Level IIA), and into the dip located between them (see Fig. 4). Thus, with regard to the 6.7 m difference in elevations observed between the burials within the cemetery, much of this elevation differential can be explained by the existence of a sloping cemetery.

The pottery from the cemetery is said to display strong continuity from the underlying pottery of Level IIA (Bilgi 1990: 167). Vessels from the cemetery have a strongly developed difference in colour between the inside and outside (black exteriors, red interiors; Bilgi 1990: 164-165, 167).<sup>12</sup>

Published ceramic forms include carinated and simple bowls with inturned or simple rims and flat or ring bases (see Fig. 5: 14-17; Bilgi 1990: Fig. 20: 446, 447, 448, 450, 451, 452; Alkim *et al.* 2003: XL, 7). These bowls often have knobs around the carination (Bilgi 1990: Fig. 20: 446; Alkim *et al.* 2003: LXXX, 1, 2) or the rim (see Fig. 5: 15-16; Bilgi 1990: Fig. 20: 448, 450, 451, 452). In some cases, there are also double horizontally pierced lugs (see Fig. 5: 14; Bilgi 1990: Fig. 20: 447). Georgieva points out similarities between these handles and examples originating from the Cernavoda I-Pevets and Rahmani cultures (2014: 233, Fig. 12: 1-3; Martino in prep.), although more direct parallels may exist in examples from Area F (Alkim *et al.* 1988, Pl. XLIX, 3, 5) and Level IIB (Alkim *et al.* 2003, Pl. LXXII, 2). There are also knobs or tabs that extend upward above the rim of the bowls (see Fig. 5: 15-17; Bilgi 1990: Fig. 20: 446, 448, 450, 451; Alkim *et al.* 2003: LXXX, 1, 2).

Bowls also often have white painted decoration on the exterior of the vessel, in bundles of parallel lines running obliquely and crossing each other (see Fig. 5: 17; Bilgi 1990: 167, Fig. 20: 450, 451?, 452). Similar painted decoration was observed in preceding levels (Level IIB and possibly Level IIA, as well as in Area C, Level II; see further discussion above). However, significant here is that the decoration is applied to the exteriors of open bowls, rather than to closed holemouth forms as seen in earlier periods (although similar bowl examples appear in Area F, Level II; Alkim *et al.* 1988, Pl. XLIX, 3, 5, 6). Very close parallels to these bowl forms appear on the Dündartepe summit (Thissen 1993: Fig. 4: 1-4).

<sup>12</sup> These examples are described as having black slipped and burnished exteriors (Bilgi 1990: 164). The presence of a slip, however, seems unlikely, as much of the other pottery at the site displays a similar colour pattern, which is attributed to firing technology (Alkim *et al.* 1988: 172; Thissen 1993: 214; see also Bilgi 1990: 167, where he says that the appearance is not due to a slip).

Although bowl forms are most frequently illustrated, jar forms also occur (Alkım *et al.* 2003: XLI, 8, 9; LXXXIII, 3). Also appearing is a jar with a slight carination and a simple rim, which has four knobs, two at the rim and two on the carination (Bilgi 1990: Fig. 20: 449). Other forms include simple straight sided mugs with a horizontal handle (Alkım *et al.* 2003: XLII, 4) and pedestal bases (Alkım *et al.* 2003: XLII, 12). In addition to the painting mentioned above, incised decoration also occurs (Alkım *et al.* 2003: XL, 7).

Other forms of material culture from the cemetery may also have chronological significance. Links have been made between figurines originating from the cemetery and examples known from Europe, and a group of flat gold ring-shaped idols have been linked to examples from sites in the Balkans such as Varna in Bulgaria (Yakar 1981: 97, Bilgi 1984b: 74; Bilgi 1990: 175; Zimmermann 2007). These ring idols were found both in the cemetery (SK192, Bilgi 1984: Fig. 18: 266; SK246, Doğan 2006, Kat. No. 228, İ81-397; SK569, Bilgi 1990: Fig. 19: 427) and in the settlement remains beneath it (Area D, Level II; Bilgi 1984b: Fig. 18: 265), and seem to have a wide variety of parallels in Southeast Europe, where they have a long lifespan and continue into the 3<sup>rd</sup> millennium, appearing in Schönfeld and Bell Beaker contexts (Zimmermann 2007: 26). Bilgi himself relates these idols to similar examples from the Varna cemetery in Bulgaria (Bilgi 1984b: 74). The distinctive type found at İkiztepe, with a flaring “head” and centrally pierced circular body, was most common in the late 5<sup>th</sup> and early 4<sup>th</sup> millennia BC (ca. 4500-3500 BC) (Zimmermann 2007: 26). Many of the examples found at Anatolian sites, although from poorly documented contexts, were generally attributed to the Early Bronze Age (i.e. the necropolis of Göller, and Kalinkaya) (Zimmermann 2007: 28). Examples from the site of Bakla Tepe were attributed to the EB I-II periods (Zimmermann 2007: 29). In fact, İkiztepe presents the largest and best stratified collection of these idols in an Anatolian context, which were all dated by the excavators to the EBII-III. Zimmermann and Lichter, however, have argued that these examples should be more accurately dated to the Chalcolithic period (Lichter 2006: 198; Zimmermann 2007: 28).

Although by far the largest artifactual assemblage from the cemetery consists of metal objects, finding direct comparisons for these metals has been particularly difficult. Bilgi points out some broad parallels to examples originating throughout the Near East, in Southeastern Anatolia, Syria and Greater Mesopotamia (Bilgi 1990: 173-175). Despite these broad comparisons, there are a number of peculiar types that have no obvious comparisons, and Bilgi suggests that approximately 90% of the corpus have no parallels outside the central Black Sea region (2001: 37). Lichter, however, studying the copper weaponry originating from the graves, suggests typological and compositional parallels to 4<sup>th</sup> millennium metals from Ilıpınar and southeastern Europe (2006: 196). In particular, flat axes from the cemetery have close parallels from the Late Chalcolithic burials at Ilıpınar and the settlement at Barcin Höyük (Bilgi 1984b, Fig. 14: 66, 68; Bilgi 1990, Fig. 16: 225-228<sup>13</sup>; Roodenberg 2001, Fig. 3: 1, 3; Gerritsen *et al.* 2010, Fig. 12). Furthermore, the use of arsenical copper with arsenic percentages of between approximately 1-12% is documented in metal artifacts from both the İkiztepe burials and the Ilıpınar cemetery, as well as from Barcin Höyük (Bilgi 1984b, 47, 73, Fig. 14: 66, 68; Begemann *et al.* 1994: 205, Table 2; Özbal *et al.* 2002: 41-43; Gerritsen *et al.* 2010:

<sup>13</sup> Note that axes of similar type have also been found in Levels IIA and IIB on Mound I (Bilgi 1990: Fig. 15: 222-224) and on Mound III (Bilgi 1984b, Fig. 14: 67).



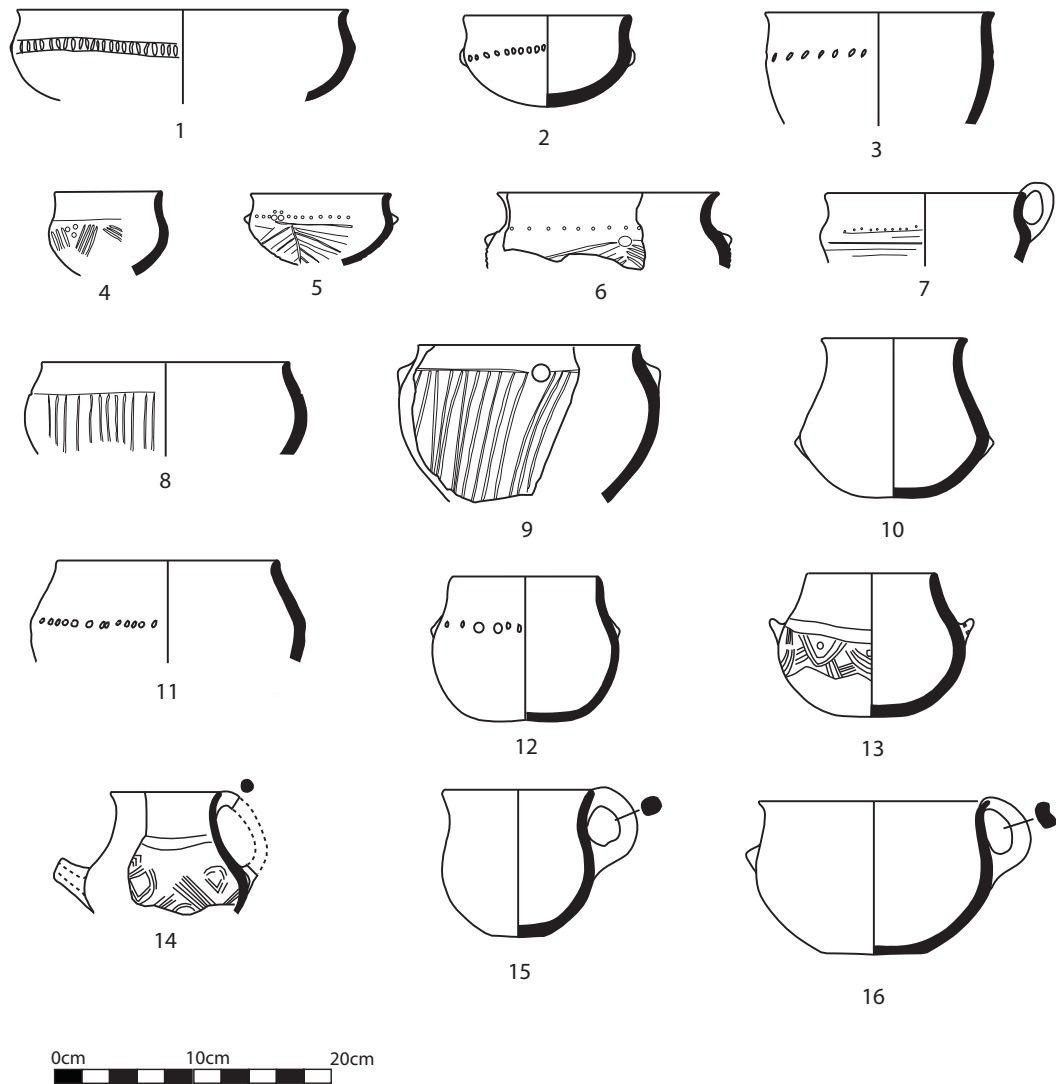


Fig. 6. Ceramics from Mound I, Level I, Phases 4-6.

**1.** Level I, Phase 6 (Alkim *et al.* 2003, Pl. LXXI, 1), ware type h.4b, findspot 1117; **2.** Level I, Phase 5 (Alkim *et al.* 2003, Pl. LXXI, 2), ware type h.4b, findspot 1000; **3.** Level I, Phase 5 (Alkim *et al.* 2003, Pl. LXXXII, 7), ware type h.4, findspot 1217; **4.** Level I, Phase 4 (Alkim *et al.* 2003, Pl. LXXXII, 5), ware type h.4, findspot 1223; **5.** Level I, Phase 3b (Alkim *et al.* 2003, Pl. LXXI, 3), ware type h.4a, findspot 1113; **6.** Level I, Phase 5 (Alkim *et al.* 2003, Pl. LXXXII, 3), ware type h.4, findspot 1354; **7.** Level I, Phase 5 (Alkim *et al.* 2003, Pl. LXXXII, 8), ware type h.4, findspot 1201; **8.** Level I, Phase 6 (Alkim *et al.* 2003, Pl. LXXX, 5),

findspot 1367; **9.** Level I, Phase 6 (Alkim *et al.* 2003, Pl. LXXX, 9), findspot 1367; **10.** Level I, Phase 5 (Alkim *et al.* 1988, Pl. XIV, 9), ware type h.4b, findspot 40; **11.** Level I, Phase 2 (Alkim *et al.* 1988, Pl. XIV, 8), ware type h.4a, findspot 19; **12.** Level I, Phase 4 (Alkim *et al.* 1988, Pl. XIV, 4), ware type h.4b, findspot 39; **13.** Level I, Phase 4 (Alkim *et al.* 2003, Pl. LXXIV, 4), findspot 1120; **14.** Level I, Phase 2 (Alkim *et al.* 1988, Pl. XII, 8), ware type h.4b, findspot 19; **15.** Level I, Phase 6 (Alkim *et al.* 2003, Pl. XXIII, 6), ware type h.4b, findspot 624; **16.** Level I, Phase 6 (Alkim *et al.* 2003, Pl. XXIII, 1), ware type h.4b, findspot 624.

207-208). This is considered an important feature of copper metallurgy in the 4<sup>th</sup> millennium BC, particularly in the Black Sea region, which is largely replaced by tin bronze alloys in the early 3<sup>rd</sup> millennium (Pernicka 2014: 453-456)<sup>14</sup>.

### Mound I, Level I, Phases 4-6

In this section, I suggest that a distinction should be made between Level I, Phases 1-3 and Level I, Phases 4-6. Thissen suggested that Area A on Mound I had produced an assemblage of classic 'Copper Age' or EBII-III pottery, as described by scholars such as Orthmann (Orthmann 1963a; Thissen 1993: 212). He describes this pottery as having characteristic impressed decoration, made by a fingernail or other implement, located in a zone around the widest diameter of the vessel; large lids with similar impressed decoration are also present (Thissen 1993: 212; Alkım *et al.* 1988: XI, 13, 15-17; XII; XIII, 1; XIV; XVI). The presence of this pottery was recognized by Alkım, who said that "simultaneously with this 'Early Hittite' culture, an additional Early Bronze type culture had lived alongside it, with numerous examples illustrating the continued influence of this earlier tradition" (Alkım *et al.* 1988: 153). He also postulated that "the discovery of a few complete pots and sherds of EB III beside Early-Hittite pottery suggests that the tradition of EB III was continued or both the inhabitants of the EB III and the Early-Hittites continued to live together for a while" (Alkım 1977: 42).

A stratigraphic explanation for this mixture of pottery types, however, would be more satisfactory. Identifying the loci in which this 'Early Bronze Age' type pottery occurs, in fact, does begin to suggest a solution<sup>15</sup>. A number of the loci assigned to Level I, Phases 1-2 contain almost exclusively Alkım's 'Early Bronze Age' type pottery. This includes a number of loci in the 800-series of findspot numbers (i.e. particularly findspots 858, 867, 868; Alkım *et al.* 2003: 198), which are all located in Area H, downslope of the summit of the mound (Alkım *et al.* 2003: Section 19). Tracing the equivalents of these loci on the published section further upslope clearly suggests that these loci in fact should be associated with earlier levels, despite the fact that they were excavated just beneath the surface of the mound. If these loci are re-phased to the earlier phases of Level I (i.e. phases 4-6), then the largest part of the mixing with earlier material is removed. This in fact suggests that the latest occupation on Mound I (associated primarily with Phases 1-2) may be spatially confined to the summit of the mound, while the earlier occupation (Phases 4-6) may have been slightly larger<sup>16</sup>.

<sup>14</sup> Muhly's discussion (1993: 242) of the problems associated with the lack of tin bronzes at İkittepe, for example, can thus likely be largely resolved through an earlier date for the metals originating from the cemetery. This was already noted as a possibility by Özbal *et al.* (2002: 46), in their discussion of the significant compositional differences between the İkittepe metals on the one hand, and the Alacahöyük and Horoztepe metals on the other.

<sup>15</sup> Note that such an explanation must rely on the published material, which may perhaps not represent the full variability of the complete assemblage. However, the patterns observable in the published material are suggestive of a broader pattern.

<sup>16</sup> Note, however, that locus 1000, located at the surface of the very northern extremity of Trench H, close to Area C, does demonstrate a mixture of 'Transitional' period types (Alkım *et al.* 2003, Pl. LXVIII-LXIX) and earlier examples, despite being phased to Level I, Phase 5, suggesting the spatial extent of the later occupation may not be entirely circumscribed to the summit of Mound I.

Furthermore, a number of examples of 'Early Bronze Age' material are concentrated in locus 1113, which is phased to Level I, Phase 3b. However, examination of the published sections (Alkım *et al.* 2003, Section 33: F1-F2), suggests that this locus may in fact represent a combination of levels, incorporating material equivalent to loci 1120 and 1122 in the neighbouring square (phased to Level I, Phases 4 and 5, respectively; Alkım *et al.* 2003: 202). If these adjustments are made, good separation between the 'EBA' and 'Transition' pottery types is generally achieved. The remaining published examples of 'Early Bronze Age' material from the latest levels of Mound I appear almost exclusively in loci excavated during the first season of excavation (particularly findspots 19 and 21, but also to a lesser extent 10, 16 and 25). It is plausible that some mixing of levels occurred before the complexity of the stratigraphy at the site was fully appreciated. However, it should be also noted that similar patterns, where certain elements of the 'Transitional' period begin to appear alongside earlier Early Bronze Age pottery types, have been observed at other sites, and may in fact be a feature of this period (Efe & Türkteki 2005: 131; see further below).

In Level I, Phases 4-6, the most frequent ware type is ware h4. This ware type is most commonly chaff and mineral-tempered, and often displays a combination of different colours on its interior and exterior surfaces, likely as a result of firing practices (Thissen 1993: 214). This is most commonly red on the interior and black on the exterior or vice versa (Alkım *et al.* 1988: 172-173). These characteristics, however, had already appeared in Level IIB, and suggest a long continuity of ceramic production throughout the Mound I sequence.

The most common forms encountered in these phases include s-curved bowls and small jars, which often occur with small knobs and a line of fingernail impression on the widest part of the vessel (see Fig. 6: 1-3, 11-12; Alkım *et al.* 1988, XI, 14; XIV, 4, 8; XVIII, 10; Alkım *et al.* 2003: XXXIX, 4, XLI, 3; LXX, 4, LXXI, 1, 2, 4; LXXXII, 7). Similar forms also occur with small knobs but without other decoration (see Fig. 6: 10; Alkım *et al.* 1988: XI, 16; Alkım *et al.* 2003: XL, 1-2, 4) or with incised or grooved decoration (see Fig. 6: 4-9, 13, 14; Alkım *et al.* 1988: XI, 15, 17; Alkım *et al.* 2003: LXX, 6; LXXI, 3; LXXX, 5, 9; LXXXII, 1-5, 8). Incised/grooved decoration occurs in a number of distinctive patterns, including stacked triangles, sometimes with dots (see Fig. 6: 4, 13-14; Alkım *et al.* 1988: XI, 17; XII, 8; L, 2; Alkım *et al.* 2003: LXXIV, 4, 6; LXXXII, 5), and a series of incised vertical lines topped by a single horizontal line (see Fig. 6: 8-9; Alkım *et al.* 1988: XIII, 1; XIV, 5; Alkım *et al.* 2003: LXXI, 3; LXXX, 5, 9; LXXXI, 1). Also common are motifs with a line of punctate horizontal dots with radiating oblique incised lines or grooves below (see Fig. 6: 5-6; Alkım *et al.* 1988: XLIX, 4; LII, 5; Alkım *et al.* 2003: LXXI, 3; LXXX, 3; LXXXII, 1, 3-4). Mugs or bowls with flaring rims and a vertical handle, sometimes with knobs, also appear (see Fig. 6: 15-16; Alkım *et al.* 1988, Pl. XII, 4, 7; XII, 6; Alkım *et al.* 2003, XXIII, 1), although this is a long-lived form and is not likely to be chronologically specific to this period.

Similar red and black surface colour combinations are observed at Alaca Höyük in Levels 5-8 (Koşay 1944: 89), Yassıkaya (Efe 2004: 30), Çadır Höyük Late Chalcolithic and EBI (Steadman *et al.* 2007: 399; Steadman *et al.* 2008: 63, 68, 75), Etiyokuşu (Kansu 1940: 67, 74), Ahlatlıbel (Koşay 1934: 20), Resuloğlu (Yıldırım 2006: 8) and at the Black Sea coastal sites of Dündartepe, Tekeköy and Kavak (Thissen 1993: 213; Kökten *et al.* 1945: 386, 392). "Black-topped ware", which may also be more distantly related, is known at Demircihüyük

(Seeher 1987a: 109; Efe 1988: 7), and at Külliüoba in the EBI-II (Efe & Ay 2000: 8, Ware D; Sarı 2009). The possible relationship between the central Anatolian pattern of red and black surface colour alternation and that of the Karaz or Kura-Araxes cultures has long been noted (Todd 1973). Palumbi discusses the potential central Anatolian influence on the assemblage of Level VIA at Arslantepe, for example (2008: 81), and ultimately suggests that in fact this colour tradition originated in central Anatolia and moved eastward (2008: 101), echoing other earlier scholars who have suggested a similar Anatolian origin for this material (Frangipane 2000: 448; Kiguradze & Sagona 2003: 93).

The most direct parallels for the forms occurring in these levels are summarized in Table 2. These parallels can be observed to be concentrated geographically in the Black Sea coastal area (Dündartepe, Kavak, Tekeköy), the Alaca area (Alaca Höyük, Pazarlı, Cıradere, Boğazköy), and the Ankara area (Ahlatlıbel, Etiyokuşu). Parallels with Alişar and Çadır Höyük occur, but are in general less frequent.

The fact that some of the best parallels for the materials from Level I, Phases 4-6 outside of the Black Sea coastal region come from Alaca Levels 8-5 and some of the tombs from the site, however, introduces a new aspect of chronological controversy. The stratigraphy and dating of the Alaca tombs in particular has been a subject of a great deal of discussion (Arık 1936, Schaeffer 1948, Koşay 1951, Orthmann 1963a; Huot 1982; Gürsan-Salzmänn 1992; Özyar 1999; Gerber 2006). The dating of other similar assemblages, often originating from burial contexts, is even more uncertain, and is often primarily based on the dating of the Alaca sequence (i.e. Horoztepe, Mahmatlar, Resuloğlu). The general consensus seems to be that these tombs should be dated some time in the late EBII or early EBIII (Gürsan-Salzmänn 1992; Gerber 2006; Steadman 2011; Düring 2011). However, Gerber's reassessment of the pottery from Levels 5-8 of the settlement suggests that while Levels 5-7 appeared to show evidence of mixing, Level 8 did not, and that the red-and-black coloured examples were limited to Level 8 (Gerber 2006: 382). Indeed, many of the best observable parallels for the İkiztepe material originate from Level 8. This suggests that the best parallels for the Level I, Phase 4-6 material may be from the earlier part of the relevant time range (i.e. possibly late EBII).

Forms such as early beak-spouted pitchers, tankards and depas amphikypella are widely distributed throughout Anatolia beginning in the late EBII and continuing into the EBIII (Yılmaz 2010; Şahoğlu 2014). The complete absence of these forms in the Mound I sequence is notable, and could indicate one of two possible scenarios. Firstly, there may be a hiatus in the Mound I sequence between the late EBII (as represented by Level I, Phases 4-6) and the 'Transitional Period' (Mound I, Levels 1-2; see below). Alternatively, the absence of these forms could simply suggest a different cultural trajectory for the Black Sea coastal area during this time period, with diminishing relationships to the south and west. Efe (2007) has proposed the existence of a 'Great Caravan Route' that facilitated the spread of material culture and ideas between western Anatolia and areas to the southeast. However, although occasional examples of the types associated with this trade system appear to the north in north-central Anatolia, the impact of this system was clearly comparatively limited in this area (Efe 2007: 60; Efe & Ay-Efe 2001: 252). It would therefore not be unreasonable to believe that sites along the Black Sea coast, including İkiztepe, would have been even further removed from this system of communication.

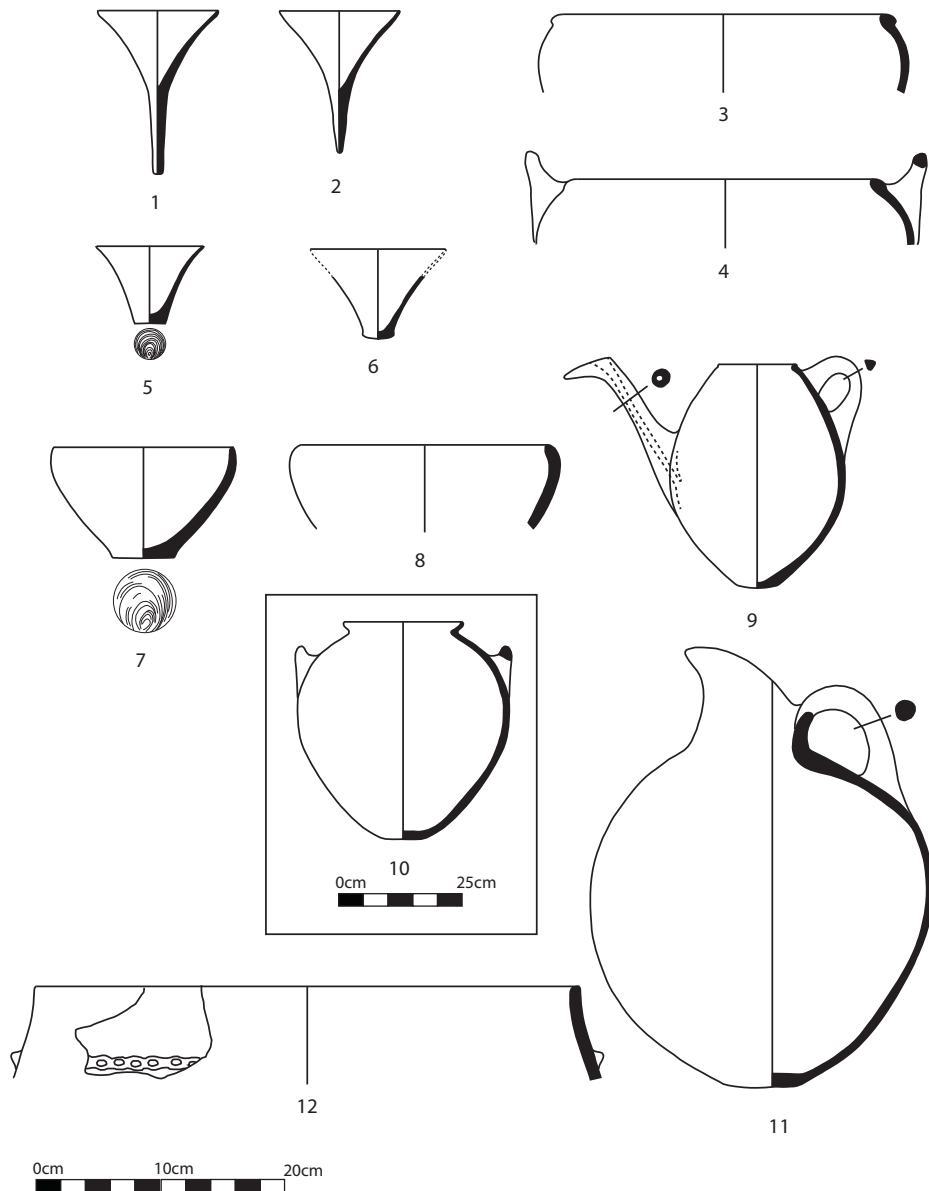


Fig. 7. Ceramics from Mound I, Level I, Phases 1-3.

**1.** Level I, Phase 2 (Alkım *et al.* 1988, Pl. I, 7), ware type h.1a, findspot 5; **2.** Level I, Phase 2 (Alkım *et al.* 1988, Pl. I, 8), ware type h.1a, findspot 5; **3.** Level I, Phase 2 (Alkım *et al.* 1988, Pl. III, 7), ware type h.1a, findspot 5; **4.** Level I, Phase 2 (Alkım *et al.* 1988, Pl. III, 19), ware type h.1a, findspot 25; **5.** Area F, Level I (Alkım *et al.* 1988, Pl. XLIV, 2), ware type h.1a, findspot 308; **6.** Level I, Phase 3 (Alkım *et al.* 1988, Pl. I, 1), ware type h.1a, findspot 35; **7.** Level

I, Phase 1 (Alkım *et al.* 1988, Pl. XLV, 1), ware type h.1b, findspot 224; **8.** Level I, Phase 2 (Alkım *et al.* 1988, Pl. II, 11), ware type h.1a, findspot 5; **9.** Level I, Phase 2 (Alkım *et al.* 2003, Pl. II, 3), ware type h.1a, findspot 414; **10.** Level I, Phase 2 (Alkım *et al.* 2003, Pl. XXII, 2), ware type h.1c, findspot 611; **11.** Level I, Phase 2 (Alkım *et al.* 2003, Pl. III, 5), ware type h.1a, findspot 414; **12.** Level I, Phase 3a (Alkım *et al.* 2003, Pl. LXXIII, 4), ware type h.4c, findspot 1110.



### Mound I, Level I, Phases 1-3

Level I as a whole was designated as representing the ‘Transitional’ period (sometimes also referred to as the ‘Early Hittite Period’), which reflects the terminology used by Orthmann for this period (Übergangsperiode, 1963a: 10). The stratigraphic evidence outlined above suggests that remains from this period can be largely limited to Level I, Phases 1-3. This period has not been widely excavated in central Anatolia, and remains poorly understood, but materials from this period have been found at Küllüoba (Phase IIA-D; Efe & Türkteki 2005), Bahçehisar (Efe 1994), Boğazköy (NW Hang 8c-d & 9; Orthmann 1963b), Gordion (particularly PN3-7; Gunter 1991), Kültepe (Karum III-IV; Emre 1989) and Polatlı (Lloyd & Gökçe 1951).

The pottery from the upper phases of Level I on Mound I is generally light-coloured (red/brown), well-fired and wheel-made (ware type h1 is most frequent; see Alkım *et al.* 1988: 161-171 for a more detailed discussion; Alkım *et al.* 2003: 13-14). It is also suggested that an important feature of the Level I pottery is that it has no decoration (Alkım *et al.* 2003: 149), apart from the occasional appearance of a reddish slip and frequent burnishing (Alkım *et al.* 1988: 163; 2003: 13). Common forms include wide flaring cups with pointed bases, similar to cornets (see Fig. 7: 1-2; Alkım *et al.* 1988, Pl. I: 7-21, Pl. XLIV: 5-7), as well as similar cups with a thin flat base that is often string-cut (see Fig. 7: 5-6; Alkım *et al.* 1988, Pl. I: 1-6; Pl. XLIV: 1-4, 10). Wide shallow bowls with upturned simple, bead or inturned hammerhead rims also occur (see Fig. 7: 3-4, 7-8; Alkım *et al.* 1988, Pl. II: 5-14; Pl. III: 1-18), as do carinated bowls with flaring rims. Beak-spouted pitchers (see Fig. 7: 11; Alkım *et al.* 1988, Pl. V: 1-6, Pl. XLVII: 1-3), and holemouth teapots with long spouts with downturned tips (see Fig. 7: 9; Alkım *et al.* 1988, Pl. IV: 3-17) are common. A very similar suite of forms can be observed in the ‘Old Hittite’ levels at Dündartepe (Kökten *et al.* 1945, Pl. LXX).

These forms are generally typical central Anatolian forms (see Table 3), and very good parallels can be found at Küllüoba (Efe & Türkteki 2005) and Boğazköy in Levels 8c-d and 9 (Orthmann 1963b). This corresponds well with the ‘Transitional’ date assigned to them by the excavators. In general, somewhat more distant parallels can be seen with ceramics from Kültepe (Karum Levels III-IV; Emre 1989) and Beycesultan Levels IX-VI (Lloyd & Mellaart 1962). Although the excavators suggest that they may be intrusive from the Hellenistic period, related to the construction of the dromos tomb, bowls with horizontal ridging or fluting (Alkım *et al.* 2003, Pl. XIV: 2, 6, see p. 17) have good parallels at Polatlı (Lloyd & Gökçe 1951, Fig. 11: 6-17), and Küllüoba in Levels IIIA and IID (Efe & Türkteki 2005: 126). Some distinctive forms visible at İkiztepe, however, do not display direct parallels at any of these sites, most notably the exaggerated pointed cornets. Other rare forms, such as scoops and funnels (Alkım *et al.* 1988: Pl. V, 8; XXI, 5-6; XLVI, 6) have parallels at Galabovo Levels 4-1a (Leshtakov 2002, Fig. 13: 3-4).

A few potential differences can be observed between the earliest levels in this period (Phases 3a and 3b) and the later levels (Phases 1 and 2). Flaring flat-bottomed flaring cups seem to be confined to the earlier levels<sup>17</sup>, and develop into pointed cornet-like forms in the later levels. Similar cups also appear slightly earlier at Küllüoba, where they appear in Phase

<sup>17</sup> They also appear in Area F, Level I (Alkım *et al.* 1988, Pl. XLIV: 1-4, 10).

IId (Efe & Turkteki 2005, Fig. 7: 4), and at Boğazköy, where they are most common in Level 9 (Orthmann 1963b). Also largely confined to Phase 3 are jars with a band of “chain”-like decoration, which also appear to be most common in Boğazköy Level 9.

Although some of these forms continue to appear later in the Middle Bronze Age, including teapots and beak-spouted pitchers, the parallels with the EBIII-MBA transitional levels appear more direct. Teapots in this earlier period tend to be shorter and squatter, as opposed to the taller and narrow forms that occur in the Middle Bronze Age, often with pedestal bases. Similarly, beak-spouted pitchers are wider in this period and have less pronounced spouts and flat or rounded bases, as opposed to the exaggerated spouts and pedestalled bases visible in the Middle Bronze Age (i.e. Kültepe Karum Level II-Ib; Boğazköy NW Hang Schicht 8a). Although a few examples of later types may exist (e.g., Alkım *et al.* 2003, Pl. XLIX, 3), the evidence suggests that the occupation of Mound I likely ends prior to the height of the *karum* period, as observed at Kültepe II-Ib.

#### THE RADIOCARBON EVIDENCE: DISCUSSION AND CONCLUSIONS

The discussions above for each of the different phases provide a relative stratigraphic and comparative framework for the interpretation of the Mound I sequence. Table 4 provides a list of the radiocarbon dates published from Mound I at İkiztepe<sup>18</sup>, and allows the proposal of more firm absolute dates for the sequence. While the published material culture evidence from Levels IIB, IIA and the cemetery is comparatively scarce, the available parallels for this material suggest a time range in the 4<sup>th</sup> millennium for all three parts of the sequence, potentially covering a fairly long timespan. The radiocarbon evidence largely provides confirmation for this potential date range. The published radiocarbon results suggest a date for the Level IIB in the late 5<sup>th</sup> millennium BC (Bln2526, Bln2526A), although it is notable that these dates originate from wooden beams, which may exaggerate the age of the samples. For the later part of the sequence, a date for Level IIA in the late 4<sup>th</sup> millennium BC is indicated (HUR53, Bln2525/DDR). One notable date from Area C, Level II (Ikiz.16), a level which has been the object previous chronological discussion based on its ceramic assemblage, falls in the mid-4<sup>th</sup> millennium BC, corresponding well with attempts to re-date this level to the Late Chalcolithic period (i.e. Thissen 1993, Parzinger 1993, Schoop 2005a). However, the time range represented by this sample is quite wide, and it is difficult to propose a direct chronological link to either Level IIA or IIB, although a stratigraphic link to Level IIB seems most clear.

The combined evidence suggests that the full Mound I, Level II sequence (including Level IIB, Level IIA and Area C, Level II) likely spans the period from the late 5<sup>th</sup> millennium until the late 4<sup>th</sup> millennium BC. A similar date likely applies to the comparable assemblage

<sup>18</sup> A series of dates published by Kış and Işık (1987) for Mound I, Level I and Level II are particularly problematic, as they provide dates ranging from the late 4<sup>th</sup> millennium BC to the mid-8<sup>th</sup> millennium BC (HUR97, HUR98, HUR99, HUR100, HUR101, HUR102, HUR103, HUR 105). No detailed provenience information (i.e. squares or locus numbers) is included for these samples. Some of these dates are older than any other dates from the site, and without further information about their context, it is impossible to reconcile them into the Mound I sequence. As a result, this group of dates is not considered here.

observed on the Düdartepe summit, as already suggested by Thissen (1993). Some similar material originating from the sites of Tekeköy and Kavak may indicate that these sites were occupied contemporaneously, but the stratigraphic origins of this material are uncertain.

Three dates performed on human remains from the cemetery (ITSK602, ITSK621, ITSK643; Welton 2010: 102-103, 2014: 397) suggest that these burials can be dated to the end of the 4<sup>th</sup> millennium, likely soon after Level IIA, which stratigraphically predates them. The continuity in ceramic manufacture between Level IIA and the cemetery<sup>19</sup>, as well as a number of other forms of material culture, which suggest a date in the late 4<sup>th</sup> millennium (see above), appear to support this dating.

Prior to the beginning of the Mound I sequence, the evidence from Mound II, Level II (dating perhaps to the mid-5<sup>th</sup> millennium BC) indicates a wide variety of connections to areas throughout Anatolia, the Aegean and into Southeastern Europe. This was a highly integrated and connected time period, and İkiztepe clearly participated fully in this system of ties. Although the published evidence remains scarce for the 4<sup>th</sup> millennium occupation at İkiztepe, the data available are suggestive of continued connections with some areas of western Anatolia, the Aegean and southeastern Europe, although perhaps not on the scale observed in the preceding period.

Because the Late Chalcolithic remains poorly understood in northern and central Anatolia, particularly relevant to this discussion is one of the few well-dated regional sequences from this period, originating from the sites of Ilıpınar and Barcin Höyük in northwestern Anatolia (Roodenberg 2008, Gerritsen *et al.* 2010). Although direct parallels between the ceramic assemblages from these sites are comparatively rare, metallurgical parallels, in both typological and technological aspects, are particularly notable, and provide support for the existence of broad connections between İkiztepe and areas in northwestern Anatolia during the 4<sup>th</sup> millennium BC.

It does not appear to be possible to separate the published radiocarbon dates for Mound I, Level I into clear and coherent earlier (Phases 4-6) and later (Phases 1-3) periods, as the dates are not consistent with their stratigraphic positions within the excavations. As a result, the dates suggest a long date range for Level I, ranging from the early 3<sup>rd</sup> millennium (particularly İkiz.15) into the 2<sup>nd</sup> millennium, although it is impossible to determine whether this sequence represents a continuous occupation. This, however, corresponds reasonably well, if imprecisely, with the parallels and dating suggested above, with a date for Phases 4-6 in the early-mid 3<sup>rd</sup> millennium (possibly late EBII), and Phases 1-3 dating to the very late 3<sup>rd</sup> or very early 2<sup>nd</sup> millennium BC. The earlier of these two periods (i.e. Phases 4-6) is also observed in the slope excavations at Düdartepe and at the sites of Tekeköy and Kavak, suggesting wide-ranging occupation in this region at this time. The later of the two periods (i.e. Phases 1-3) is also present at Düdartepe.

In general, the materials from Level I, Phases 4-6, as well as at the other Black Sea sites, are suggestive of a more general shift in orientation in regional focus compared to the earlier remains from Mound I, Level II and the cemetery. They appear to indicate more limited

<sup>19</sup> Note also the discussion of continuity in metallurgical technology in Özbal *et al.* 2002: 43.

connections in southeastern Europe and western Anatolia compared to the preceding period. In particular, many of the most frequent markers of this period in western Anatolia do not appear at the site. The reasons for this absence may be chronological, but are equally likely to represent a divergent cultural trajectory for this region, which may have been comparatively isolated from trade networks covering large portions of western and southern Anatolia in the late EBII-EBIII. In contrast, connections to north-central Anatolia become somewhat more frequent, but occur over a comparatively limited geographical area, suggesting that more regionalized connections and greater insularity may have been a factor at İkiztepe during this time period. This, however, is in contrast to the situation observed in the later part of Mound I, Level I (Phase 1-3). During this period, connections begin to expand over a somewhat wider area throughout Anatolia, stretching both to the south (i.e. the Kültepe and Boğazköy areas) and to the west in inland western Anatolia (i.e. Polatlı, Küllüoba). Unfortunately, the situation of the Black Sea during the later part of the Middle Bronze Age and during the Late Bronze Age remains completely unknown.

The preceding discussion has outlined a chronological framework for the Mound I sequence at İkiztepe, spanning the Late Chalcolithic and Early Bronze Age periods (4<sup>th</sup>-3<sup>rd</sup> millennia BC), by focusing on both the relative and absolute chronological evidence. Although the evidence allows the proposition of a broad framework for interpreting evidence from this region, the finer details of this sequence remain unclear, and a better understanding of this key period in the coastal region of Anatolia awaits further excavations.

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## APPENDIX

**Table 1.**  
**Ceramic Parallels for Areas C and F, Level II; Mound I, Levels IIB, IIA, and Cemetery**

Form	İkiztepe Examples	Parallels
Closed holemouth form with white paint on exterior (see Fig. 5: 1, 2, 8, 10, 12)	Area C, Level II: Alkım <i>et al.</i> 1988, Pl. XIII, 6, 8; XIX, 6 Area D, Level II,3: Alkım <i>et al.</i> 1988, Pl. XLIX, 8 Area D, Level IIA,2: Alkım <i>et al.</i> 2003, Pl. LXXXI, 2? Area H, Level IIB: Alkım <i>et al.</i> 2003, Pl. LXXXI, 7, 8	Tekeköy, Orthmann 1963a, Pl. 67: 17/06 Büyük Güllücek, Koşay & Akok 1957, Pl. XIII Çadır Höyük, Middle-Late Chalcolithic; Steadman <i>et al.</i> 2008: 64, Fig. 13q; Fig. 17: f-g Dündartepe, Thissen 1993, Fig. 4: 5, Fig. 5: 1-2 <i>Paint on exterior of closed form only, not form itself:</i> Alişar, von der Osten 1937, 57, Fig. 63: 3,4 Alaca Höyük, Schoop 2005a, Pl. 7: 2 Beycesultan SC4, Lloyd & Mellaart 1962: Fig. P10: 9, P11: 9 Aphrodisias-Pekmez, Sharp Joukowsky 1986, Fig. 377: 49, 384: 37, 41, 45-46 Tigani IV, Felsch 1988, Pl. 69: 399, Pl. 72: 459, 461; Pl. 69: 401, 407 Çadır Höyük Late Chalcolithic, Steadman <i>et al.</i> 2007, Fig. 8 j, m Dündartepe, Thissen 1993, Fig 5: 3 Çukurici Höyük, Level VII, Horejs 2014: 26 Küllüoba 6-3, Efe & Ay 2000: 17, Pl. 3: 10, Pl. 21: 12 Kuruçay 6A-3, Duru 1996: 45, Pl. 3: 10, Pl. 21: 12 Liman Tepe LCh: Horejs 2014: Tab. 1 Bakla Tepe LCh, esp. LC2-3; Şahoğlu & Tuncel 2014: 74 Miletus, Kouka 2014, Fig. 6E-F
Bowl form with white paint on exterior (see Fig. 5: 7, 17)	Area F, Level II: Alkım <i>et al.</i> 1988, Pl. XLIX, 3, 5, 6 Cemetery: Bilgi 1990, Fig. 20: 450, 452	Dündartepe, Orthmann 1963a, Pl. 65: 16/10; Thissen 1993, Fig. 4: 1-3 Tekeköy, Thissen 1993, Fig. 4: 4 Mersin XIIA, Garstang 1953, Fig. 118: 5 Hacılar-tepe, Eimermann 2008, Phase IV, Layer 7: 380, Fig. 9: 1-3 (white paste in incised decoration)
Horizontally double/triple-pierced lug handles (see Fig. 5: 7, 14)	Area F, Level II: Alkım <i>et al.</i> 1988, Pl. XLIX, 3, 5 Area H, Level IIB,6: Alkım <i>et al.</i> 2003, Pl. LXXII, 2 Cemetery: Alkım <i>et al.</i> 2003, Pl. LXXXIII, 3; Bilgi 1990, Fig. 20: 447	Cernovoda I Pevets culture, Rahmani culture; Georgieva 2014: Fig. 12 Tekeköy, Kökten <i>et al.</i> 1945, Pl. LXIX, 1
Deep bowl with inturned rim, sometimes with small handles (see Fig. 5: 6)	Area C, Level II: Alkım <i>et al.</i> 1988, Pl. XVIII, 2-6	Ilıpınar LC Cemetery; Roodenberg 2008: Fig. 9: 3, Fig. 11: 2 Dündartepe, Thissen 1993, 214, Fig. 5: 5
Small cup with knobs at rim	Area C, Level II: Alkım <i>et al.</i> 1988, Pl. XII, 2	Kuruçay Level 6A, Duru 1996, Pl. 58: 3-5; Level 3: Pl. 99: 2



Form	İkiztepe Examples	Parallels
Jar form with concave neck and knobs at rim (see Fig. 5: 2-4)	Area C, Level II: Alkım <i>et al.</i> 1988, Pl. XIII, 5; XIV, 3; XIX, 4; XX, 2, 4; XXII, 4	Büyük Güllücek, Koşay & Akok 1957, Pl. 18: 1 Dündartepe, Orthmann 1963a, Pl. 65: 16/08; Thissen 1993, Fig. 4: 4, 6: 5, 7: 5 Kavak, Orthmann 1963a, Pl. 68: 18/04 Horoztepe, Özgüç & Akok 1958, Fig. 70, 105-107 Kayapınar, Orthmann 1963a, Pl. 72: 21/06 Maltepe, Orthmann 1963a, Pl. 74: 23/13 Alaca Höyük, Koşay 1944, Pl. 120, 122 Kuruçay Level 4, Duru 1996, Pl. 94: 1-2 Kuşsaray, Schoop 2005a, Pl. 12: 12 Yarıkkaya-Plateau, Hauptmann 1969, Pl. 35: 5; Schoop 2005a, Pl. 25: 2, 6-7; 26: 2, 8; 27: 1; 28: 13 Çadır Höyük, Steadman <i>et al.</i> 2007: Fig. 7: m, n, r Büyükkaya, Mittleres & Unteres Plateau, redeposited material; Schoop 2005b, Fig. 6: 65 Barcin Höyük, Gerritsen <i>et al.</i> 2010, 205, Fig. 11: 2-4
Holemouth form with vertically double-pierced horizontal lugs (see Fig. 5: 5)	Area C, Level II: Alkım <i>et al.</i> 1988, XIX, 8-9	Handle: Kuruçay Level 4, Duru 1996, Pl. 95: 13 Dündartepe, Thissen 1993, 214
Relief decoration (anthropomorphic & zoomorphic)	Mixed: Alkım <i>et al.</i> 2003, Pl. LXXXIII, 1 Level I, Phase 6: Alkım <i>et al.</i> 2003: Pl. LXXV, 1 Area A, Level IIA, 1: Alkım <i>et al.</i> 2003, Pl. LXXIV, 2 Area D, Level IIA: Alkım <i>et al.</i> 2003, Pl. LXXXIII, 2 Cemetery: in metal, Alkım <i>et al.</i> 2003, Pl. XCI, 1	Demircihöyük, Efe 1988, Pl. 5: 9, Pl. 23: 2-6 Köşk Höyük, Silistreli 1989 Kuruçay 12 Alt: Duru 1994, Pl. 42: 2-12; 11 Üst: Pl. 77: 11-12, 16-17 Höyücek TD, Duru 1995, Pl. 19: 1-5; Duru 1992, Pl. 13: 1-3 Cucuteni & Precucuteni, Mantu 1993
Bowls with rim protrusions (see Fig. 5: 15-17)	Area D, Level IIA, 2: Alkım <i>et al.</i> 2003, Pl. LXXXI, 3 Cemetery: Alkım <i>et al.</i> 2003, Pl. LXXX, 1-2; Bilgi, Fig. 20: 446, 448, 450-452	Kuruçay Level 6, Duru 1996, Pl. 66: 4-5; Pl. 68: 5, Pl. 69: 1, 7; Pl. 70: 1-5; Level 4: Pl. 90: 1, 4 Höyücek, Batı Çukur: Duru 1995, Pl. 31: 1 Gülpınar: Seeher 1987b, Pl. 3: 3 Büyükkaya, Oberes plateau: Schoop 2005b, Fig. 1: 8-11 Troy I, Blegen 1950, Fig. 253: 18-19, Fig. 254, Fig. 257 (with faces)
Fenestrated stands (see Fig. 5: 13)	Mound I, Level I, Phase 1: Alkım <i>et al.</i> 1988, Pl. XV, 13 Mound I, Level I, Phase 3b: Alkım <i>et al.</i> 2003, Pl. XIV, 9 (not fenestrated) Mound I, Level IIA: Alkım <i>et al.</i> 2003, Pl. LXXXI, 5 Area C, Level I: Alkım <i>et al.</i> 1988, Pl. XXI, 7 Area C, Level II: Alkım <i>et al.</i> 1988, Pl. XV, 12; XVI, 8	<i>Fenestrated</i> : Alişar, von der Osten 1937, Pl. 76: 1, 2 Boğazköy NW Hang Level 9; Orthmann 1963a, Pl. 58: 14/19 Arslantepe Period VIA, Frangipane 2000, Fig. 5: 2; Palumbi 2008, Fig. 3.15: 15-17; Fig. 3.19: 1 Tepecik, Phase 3; Palumbi 2008, Fig. 3.27: 12-13 Troy I, Blegen 1950, Fig. 223a: A13 <i>Unfenestrated</i> : Alişar, von der Osten 1937, Fig. 75: e1616, e1617, e2019; Orthmann 1963a, Pl. 4: 2/14 Alaca Höyük, Koşay 1951, Pl. 27: Al-b-212; Pl. 28: Al-b-372; Pl. 97: 1-2 Horoztepe, Özgüç & Akok 1958, Pl. 16:5; Orthmann 1963a, Pl. 70: 20/17-20/19 Çadır Höyük, Steadman <i>et al.</i> 2008, Fig. 18: r

**Table 2.**  
**Ceramic parallels for Mound I, Level I, Phases 4-6**

Form	İkiztepe Examples	Parallels
Mug with flaring neck and vertical handle (see Fig. 6: 15)	Level I, Phase 6: Alkım <i>et al.</i> 2003, Pl. XXIII, 6, 9	Alaca Höyük, Koşay 1944, 144-145, Al.c.580, Al.c.532; Pl. LXXII: 136, Al-a-200; Pl. LXXII; Arık 1936: Pl. LXXI: Al. 170; Koşay 1951: Pl. XCIX: 1, 6; Arık 1936, 70, Al.172 Alishar, von der Osten 1937, Pl. VIII: e1074, e1614, e279, e2810, e1440, e1348, e2730, Fig. 73: e1878, Fig. 170: c915 Boğazköy, Orthmann 1963a, Pl. 56: 14/08-14/11; 1963b, Pl. 2: 108, 3: 111, 114, 8: 113 Horoztepe, Özgüç & Akok 1958, Pl. 15: 8 Maltepe, Orthmann 1963a, Pl. 73: 23/07-23/08
S-curved bowl with knobs and no decoration	Level I, Phase 1: Alkım <i>et al.</i> 2003, Pl. XL, 1*, 4* Level I, Phase 2: Alkım <i>et al.</i> 1988, Pl. XI, 16 Level I, Phase 6: Alkım <i>et al.</i> 2003, Pl. XL, 2	Alaca Höyük, Koşay 1944, Pl. LXXI: 169, 303; Koşay 1951, Pl. XCIX: 3-4 Alishar, von der Osten 1937, Fig. 168: c914, Pl. VIII: b884 Ahlatlıbel, Koşay 1934, p. 36: AB141, AB380, p. 37: AB235 Etiyokuşu, Orthmann 1963a, Pl. 28: 6/05; Pl. 32: 6/38 Pazarlı, Koşay 1941, Pl. XII: P267 Polatlı, Level XI, Lloyd & Gökçe 1951, Pl. V: a
S-curved bowl or cup with knobs and fingernail impressions at the widest part (see Fig. 6: 1-3)	Level I, Phase 1: Alkım <i>et al.</i> 2003, Pl. XXXIX, 4*, XLI, 3* Level I, Phase 3: Alkım <i>et al.</i> 1988, Pl. XI, 14; XVIII, 10 Level I, Phase 3b; Alkım <i>et al.</i> 2003, Pl. LXX, 4*, LXXI, 4* Level I, Phase 5: Alkım <i>et al.</i> 2003, Pl. LXXI, 2; 2003, Pl. LXXXII, 7 Level I, Phase 6: Alkım <i>et al.</i> 2003, Pl. LXXI, 1 Area A: Alkım <i>et al.</i> 1988, Pl. L, 3-4, 6	Alaca Höyük, Koşay 1944, Pl. LXXI: 252, 208; Pl. LXXII: 132; Koşay 1951, Pl. CII: 6, Pl. C: 2 Pazarlı, Koşay 1941: Pl. XII: P131 Kavak, Özgüç & Akok 1958, Pl. 10: 11 Cıradere, Orthmann 1963a, Pl. 93: 33/22, 33/23 Dündartepe, Kökten <i>et al.</i> 1945, Pl. XVIII, 4
S-curved bowl with incised/grooved decoration (see Fig. 6: 4-9)	Level I, Phase 3: Alkım <i>et al.</i> 1988, Pl. XI, 17; 2003, Pl. LXX, 6 (3a); 2003, Pl. LXXI, 3* (3b) Level I, Phase 4: Alkım <i>et al.</i> 2003, Pl. LXXXII, 4-5 Level I, Phase 5: Alkım <i>et al.</i> 1988, Pl. XI, 15; 2003, Pl. LXXXII, 1-3, 8 Level I, Phase 6: Alkım <i>et al.</i> 2003, Pl. LXXX, 5, 9 Area C, Level II: Alkım <i>et al.</i> 1988, Pl. XVIII, 9, 11 Area D, Level II,3: Alkım <i>et al.</i> 1988, Pl. L, 2	Alaca Höyük, Arık 1936, 80: Al.719; Pl. CXXIX: Al.846 Ahlatlıbel, Koşay 1934, p. 25: AB704 Etiyokuşu, Orthmann 1963a, Pl. 31: 6/33 Alishar, von der Osten 1937, Pl. VIII: b38?
Cup with outturned rim and vertical handle (see Fig. 6: 16)	Level I, Phase 2: Alkım <i>et al.</i> 1988, Pl. XII, 4, 7? Area A', Phase 6: Alkım <i>et al.</i> 2003, Pl. XXIII, 1 Area A, Level II: Alkım <i>et al.</i> 1988, Pl. XII, 6	Alaca Höyük, Koşay 1944, 146, Al.d.150, Pl. LXXI: Al.169, Al.136, Al.222; Pl. LXXIV; Koşay 1951, Pl. CII: 4, Pl. XCVIII: 4-5
Same with fingernail impressions	Level I, Phase 2: Alkım <i>et al.</i> 1988, Pl. XII, 5	Etiyokuşu, Orthmann 1963a, Pl. 6/41 (no handle) Ahlatlıbel, Orthmann 1963a, Pl. 27: 5/72
Very small jar with vertically pierced lugs	Level I, Phase 5: Alkım <i>et al.</i> 2003, Pl. XXIII, 4	Alishar, von der Osten 1937, Pl. VIII: b2683

Form	İkiztepe Examples	Parallels
Jar or teapot with incised decoration (see Fig. 6: 14)	Level I, Phase 2: Alkım <i>et al.</i> 1988, Pl. XII, 8	<i>Form:</i> Alaca Höyük, Koşay 1944, Pl. LXXII, Al.-a-302, Al.-a-193, Al.-a-207; Koşay 1951, Pl. XCIX: 2, Pl. CIII: 1-2, 4-5 Aşılar Höyük, von der Osten 1937, Pl. VIII: b2733, d1331, b584; Fig. 52, b.2733 Pazarlı, Koşay 1941, Pl. XII: P266, P268 Etiyokuşu, Orthmann 1963a, Pl. 31: 6/36 <i>With decoration:</i> Alaca Höyük, Arık 1936, Pl. CXXVII: Al.838; Koşay 1944, 146, Al.b.198; Koşay 1951: Pl. CVI: 1 Horoztepe, Özgüç & Akok 1958, Pl. 15: 6
Small jar with knobs (see Fig. 6: 10)	Level I, Phase 5: Alkım <i>et al.</i> 1988, Pl. XIV, 9	Ahlatlıbel, Koşay 1934, p. 39: AB365; p. 40: AB57
Small jar with knobs and fingernail impressions (see Fig. 6: 11-12)	Level I, Phase 2: Alkım <i>et al.</i> 1988, Pl. XIV, 8 Level I, Phase 4: Alkım <i>et al.</i> 1988, Pl. XIV, 4	Alaca Höyük, Orthmann 1963a, Pl. 43: 11/33; Pl. 47: 11/79-11/80 Aşılar, von der Osten 1937, Pl. VIII: b594 Dündartepe, Kökten <i>et al.</i> 1945, Pl. 68: 4 Kavak, Orthmann 1963a, Pl. 68: 18/11
Small jar with incised decoration and lug/knobs (see Fig. 6: 13)	Level 1, Phase 3b: Alkım <i>et al.</i> 2003, LXXIV, 6 Level 1, Phase 4: Alkım <i>et al.</i> 2003, LXXIV, 4	Horoztepe, Özgüç & Akok 1958, Pl. 52 (vertical handle), Pl. 53
Lid with fingernail impressions	Level I, Phase 2: Alkım <i>et al.</i> 1988, Pl. XVI, 1 Level I, Phase 3: Alkım <i>et al.</i> 1988, Pl. XVI, 4-5	Alaca Höyük, Arık 1936: Pl. XXVII: Al.212, Al.215, Pl. CXXVII: Al.840
Regular raised lid with loop handle	Level I, Phase 2-3: Alkım <i>et al.</i> 1988, Pl. XVI, 1-5 Level I, Phase 5: Alkım <i>et al.</i> 2003, Pl. XLII, 1	Etiyokuşu, Orthmann 1963a, Pl. 29: 6/16 Alaca Höyük, Arık 1936, 298, Al.991 Boğazköy, NW Hang Schicht 9, Orthmann 1963b, Pl. 16: 165 Gordion, PN-3 Level 7, Gunter 1991, Fig. 2: 31-32
Incised decoration: stacked triangles (see Fig. 6: 4)	Level I, Phase 2: Alkım <i>et al.</i> 1988, Pl. XII, 8 Level I, Phase 3: Alkım <i>et al.</i> 1988, Pl. XI, 17 Level I, Phase 3b: Alkım <i>et al.</i> 2003, Pl. LXXIV, 6 Level I, Phase 4: Alkım <i>et al.</i> 2003, Pl. LXXIV, 4; LXXXII, 5 Area D, Level II, 3: Alkım <i>et al.</i> 1988, Pl. I, 2	Alaca Höyük, Grab MA; Koşay 1944, Pl. LXXXVI, 4-5 Etiyokuşu, Orthmann 1963a, Pl. 31: 6/33, 6/36 Polath, Lloyd & Gökçe 1951, Fig. 11b: 7
Incised decoration: horizontal at top, vertical below (see Fig. 6: 8-9)	Level I, Phase 2: Alkım <i>et al.</i> 1988, Pl. XIV, 5 Level I, Phase 3b: Alkım <i>et al.</i> 2003, LXXI, 3* Level I, Phase 5: Alkım <i>et al.</i> 1988, Pl. XIII, 1 Level I, Phase 6: Alkım <i>et al.</i> 2003, LXXX, 5, 9 Area D, Level IIA: Alkım <i>et al.</i> 2003, Pl. LXXXI, 1 Area C, Level II: Alkım <i>et al.</i> 1988, Pl. XVIII, 9, 11	Dündartepe, Özgüç 1948a, Pl. 2: 6; Orthmann 1963a, Pl. 66: 16/26
Incised decoration: Dot and radiating line pattern (see Fig. 5-6)	Level I, Phase 3b: Alkım <i>et al.</i> 2003, Pl. LXXI, 3* Level I, Phase 4: Alkım <i>et al.</i> 2003, Pl. LXXX, 3; LXXXII, 4 Level I, Phase 5: Alkım <i>et al.</i> 2003, Pl. LXXXII, 1,3; LXXXVI, 8? Area D, Level II, 3: Alkım <i>et al.</i> 1988, Pl. XLIX, 4; LII, 5 Unknown: Alkım <i>et al.</i> 2003, Pl. LXXXII, 6	Horoztepe, Özgüç & Akok 1958, Figs. 52-53

**Table 3.**  
**Ceramic parallels for Mound I, Level I, Phases 1-3**

Form	İkiztepe Examples	Parallels
Conical flaring cups with string-cut bases (see Fig. 7: 5-6)	Area A, Level I, Phase 3: Alkım <i>et al.</i> 1988, Pl. I, 1-6 Area F, Level I: Alkım <i>et al.</i> 1988, Pl. XLIV, 1-4, 10 Area H, Level I, Phase 1 and mixed context: Alkım <i>et al.</i> 2003, Pl. XXXVIII, 1-2	Boğazköy NW Hang Schicht 9, Orthmann 1963b: Pl. 1: 1-4, Pl. 17: 5 Küllüoba, Phase IID, Efe & Türkteki 2005, Fig. 7: 4 Polath, Lloyd & Gökçe 1951, Fig. 12: 5 Bahçeşehir, Efe 1994, Fig. 9: 31-32
Cornets with pointed bases (see Fig. 7: 1-2)	Area A, Level I, Phase 2, Alkım <i>et al.</i> 1988, Pl. I, 7-21 Area A', Level I; Area G, Level I; Area D, Level II: Alkım <i>et al.</i> 1988, Pl. XLIV, 5-7 Area H, Level I, Phase 1: Alkım <i>et al.</i> 2003, Pl. XXXVIII, 2-5	
Bowls with inturned hammerhead rims (see Fig. 7: 3)	Area A, Level I, Phase 2: Alkım <i>et al.</i> 1988, Pl. III, 3-17	Kultepe, Karum Level IV, Emre 1989: Fig. AII: 13-14 Bahçeşehir, Efe 1994, Fig. 15: 67
Same as above with rising horizontal handles (see Fig. 7:4)	Area A, Level I, Phase 1, 2 and 4: Alkım <i>et al.</i> 1988, Pl. III, 19-20; VI, 12 Area A', Level I: Alkım <i>et al.</i> 1988, Pl. XLVI, 7	Kultepe, Karum Level IV, Emre 1989, Fig. AII: 20 Polath, Lloyd & Gökçe 1951, Fig. 8b: 1, 2, 5 Bahçeşehir, Efe 1994, Fig. 15: 69
Bowls with curving upturned rims and string cut bases (see Fig. 7: 7-8)	Area A', Level I; Area G, Level I; Area F, Level II: Alkım <i>et al.</i> 1988, Pl. XLV, 1-7 Area H, Level I, Phase 1: Alkım <i>et al.</i> 2003, Pl. XXXVIII, 8	Boğazköy, NW Hang Schicht 9, Orthmann 1963b, Pl. 1: 6-9
Bowl with circumflex applique at rim ("mustache")	Area H, Level I, Phase 1, Alkım <i>et al.</i> 2003, Pl. XXXIX, 2	Boğazköy, NW Hang Schicht 9, Orthmann 1963b, Pl. 2: 97, Pl. 19: 100
Bowls with horizontal fluting	Area A, Level I, Phase 2: Alkım <i>et al.</i> 2003, Pl. XIV, 2, 6	Polath, Lloyd & Gökçe 1951, Fig. 11: 6-17 Küllüoba IID, Efe & Türkteki 2005, Fig. 7: 3 Gordion, Gunter 1991, Fig. 2: 28, Pl. 11: 28
Biconical jar with vertical handle	Area A, Level I, Phase 1-2: Alkım <i>et al.</i> 1988, Pl. IV, 1, XXXVIII, 15	Boğazköy, NW Hang Schicht 9, Pl. 1: 29
Holemouth teapots with rising spouts with downturned tips (see Fig. 7: 9)	Area A, Level I, Phases 2-5: Alkım <i>et al.</i> 1988, Pl. IV, 3-17; Alkım <i>et al.</i> 2003, Pl. I, 1, II, 1-4 Area H, Level I, Phase 1, Alkım <i>et al.</i> 2003, Pl. XXXIX, 1	Boğazköy, NW Hang Schicht 9, 8c-d, Orthmann 1963b, Pl. 1: 30, 33; Pl. 20: 173, 175-178 Küllüoba, Efe & Türkteki 2005, Fig. 6b: 10, 12 Kultepe, Emre 1989, Karum Level IV, Fig. AI: 3; Karum Level III, Fig. AII: 9-10 Dündartepe, Kökten <i>et al.</i> 1945, Pl. LXX, 3-4
Beak-spouted pitchers (see Fig. 7: 11)	Area A, Level I, Phase 2: Alkım <i>et al.</i> 2003, Pl. III, 1, 5 Area A, Level I, Phase 5: Alkım <i>et al.</i> 1988, Pl. V, 1-5 Area A', Level I; Area F, Levels I-II: Alkım <i>et al.</i> 1988, Pl. XLVII, 1-3 Area H, Level I, Phase 4-5: Alkım <i>et al.</i> 2003, Pl. LXVIII, 1, 3, LXIX, 2	Boğazköy, NW Hang Schicht 9, 8b: Orthmann 1963b, Pl. 1: 40, Pl. 3: 115, Pl. 29: 312 Polath, Lloyd & George 1951, Fig. 9b: 1, Fig. 12: 1-4 Küllüoba, Efe & Türkteki 2005, Fig. 9c: 14-15 Bahçeşehir, Efe 1994, Fig. 18: 91 Dündartepe, Kökten <i>et al.</i> 1945, Pl. LXX, 1

Form	İkiztepe Examples	Parallels
Jar with flaring neck and rising horizontal handle (see Fig. 7: 10)	Area A, Level I, Phase 1 and 5; Alkım <i>et al.</i> 1988, Pl. VII, 1-2 Area H, Level I, Phase 2: Alkım <i>et al.</i> 2003, Pl. XXII, 2 Area G, Level I: Alkım <i>et al.</i> 1988, Pl. XLVIII, 1-2	Boğazköy NW Hang Schicht 9, Pl. 3: 122, Pl. 4: 121, 123, 124; Pl. 5: 128-129, 134; Pl. 7: 142-143
Same as above but without horizontal handle	Area A, Level I, Phase 2: Alkım <i>et al.</i> 1988, 3-12	Boğazköy, NW Hang Schicht 8c-d, Orthmann 1963b, Pl. 23: 213-214, Pl. 24: 232-234
Jar with upturned rim and row of incised tick-marks	Area H, Level I, Phase 1: Alkım <i>et al.</i> 2003, Pl. XLI, 2	Boğazköy, NW Hang Schicht 9, Orthmann 1963b, Pl. 9: 35-36
Jar with 'chain' applique band (see Fig. 7: 12)	Area A, Level I, Phase 3a-b: Alkım <i>et al.</i> 2003, Pl. LXXIII, 2, 4-5	Boğazköy NW Hang Schicht 9, Orthmann 1963b, Pl. 7: 160; Pl. 16: 159, 161-164 Maltepe, Orthmann 1963a, Pl. 77: 23/41-23/42
Scoops	Area A, Level I, Phase 1: Alkım <i>et al.</i> 1988: Pl. XXI, 5-6 Area A', Level I: Alkım <i>et al.</i> 1988, Pl. XLVI, 6	Galabovo, Leshtakov 2002, Fig. 13: 4



**Table 4.**  
**Compiled Radiocarbon Dates for İkiztepe, Mound I**

Sample No.	Mound	Area	Level	Phase	Locus No.	Square	Period	Un-calibrated date	Cal. Date BC, 2 $\sigma^{**}$	Sample Type	References
Ikiz. 8/ METU6	I	A	I	2	421	D4/IV12	Transitional	3694	2567-1683	Charred grains	Alkim 1983; Özbakan 1985, 1988, Alkim et al 2003
Ikiz. 15/ METU7	I	A	I	3a	422	D4/ IV11-12	Transitional	4267	3326-2574	Charred grains	Alkim 1983; Özbakan 1985; 1988, Alkim et al 2003
ODTU Ikiz 2	I	A	I	3a	422	D4/IV11	Transitional	3470	2109-1528	Charcoal, mixed with soil	Özbakan 1984
HUR51	I	H	I	3b	615	D3/IV10	Transitional	3498	2020-1642	Carbonized grain	Alkim 1981; Ergin & Güler 1985; Alkim et al 2003
HUR52A	I	H	I	4	620	D3/IV10	Transitional	2997	1415-1016	Carbonized wood	Alkim 1981; Ergin & Güler 1985
HUR52B	I	H	I	4	620	D3/IV10	Transitional	3153	1640-1132	Carbonized wood	Alkim 1981; Ergin & Güler 1985
HUR105	I	I	I	2			Transitional	4575	3636-2923		Kış & Işık 1987
HUR100	I	I	I	4			Transitional	5485	4580-4001		Kış & Işık 1987
HUR97	I	I	I	5			Transitional	7613	6643-6255		Kış & Işık 1987
HUR98	I	I	I	5			Transitional	6045	5282-4710		Kış & Işık 1987
HUR101	I	I	I	5			Transitional	8558	8185-7200		Kış & Işık 1987
HUR103	I	I	I	6			Transitional	4540	3629-2914		Kış & Işık 1987
ITSK621	I		Cem		SK621		EBIII	4786	3695-3375		Welton 2010
ITSK602	I		Cem		SK602		EBIII	4620	3629-3106		Welton 2010
ITSK643	I		Cem		SK643		EBIII	4457	3347-2931		Welton 2010
ODTU İkiz 7	I	A	II	-	26	D3/IV13	EBII?	4715	3761-3099		Özbakan 1984
ODTU İkiz 8	I	A	II	-	42	D4/IV13	EBII?	3914	2840-2048		Özbakan 1984
ODTU İkiz 10	I	A'	II	-	241	D12/ IV11		3515	2113-1638		Özbakan 1984
HUR53	I	A'	IIA	2	888	D4/IV11	EBII	4437	3348-2915	Carbonized wood; branches	Alkim 1983; Ergin & Güler 1985; Alkim et al 2003
Bln2525, DDR	I	H	IIA	4	1237	D4/IV10	EBII	4630	3628-3127		Bilgi 2001; Alkim 1983; Schoop 2005; Alkim et al 2003
Bln2526, DDR	I	H	IIB?	4b	1202	D3/IV9	EBII	5470	4456-4084	Wooden beams	Bilgi 2001; Alkim 1983; Schoop 2005
Bln2526A, DDR	I	H	IIB?	4b	1202	D3/IV9	EBII	5420	4439-4049	Wooden beams	Bilgi 2001; Alkim 1983; Schoop 2005
Ikiz.16	I	C	II	-	23	C20/IV3	EBII?	4788	4228-2902		Alkim 1983; Alkim et al 2003; Schoop 2005
HUR99	I	I	II				EBII?	6730	5899-5470		Kış & Işık 1987
HUR102	I	I	II				EBII?	5872	5207-4373		Kış & Işık 1987

<sup>\*\*</sup> All dates calibrated by OxCal v. 4.2.4 (Bronk Ramsey 2013); using IntCal13 atmospheric curve (Reimer *et al.* 2013).

## THE URBAN STRUCTURE OF KARKEMISH IN THE LATE BRONZE AGE AND THE SETTLEMENTS OF THE MIDDLE EUPHRATES VALLEY

Sara Pizzimenti and Giulia Scazzosi\*

### **Abstract**

*The Turco-Italian Archaeological Expedition at Karkemish has provided new evidence for the Late Bronze Age period at the site. An extensive Late Bronze I occupation has been brought to light in many excavation areas, such as the Water Gate (Area H), the South Gate (Area D), and areas A, B and G. This variety of contexts provides the basis for future studies dealing with functional interpretations of spaces and material culture. This paper analyses the Late Bronze I and II archaeological data from Karkemish, with the aim of better understanding the role of the city within the Middle Euphrates valley during the age of the first empires and internationalism.*

### I. INTRODUCTION

Karkemish is located in the region of Gaziantep, on the border between Turkey and Syria (coordinates 36°49'46.36 N, 38°0'59.26 E), with the Turkish side of the site extending over an area of 55 ha (Fig. 1). The importance of Karkemish, as shown by its long and almost uninterrupted history, from the early Prehistory until the Islamic Age, is also due to its strategic position on the Euphrates river at the crossroad of an international trade network (Marchetti 2012: 132-133; Lawrence and Ricci 2016: 62-63). The Late Bronze (henceforth LB) II represented one of the most flourishing periods of the city (De Martino 2014: 86; Mora 2014: 94; Marchetti 2015a: 21).

After the British Museum Excavations between 1911 and 1914 and then again in 1920, with a break due to World War I, the site remained unexplored for almost a century. Investigations at the site and within its neighbouring region have been recently started again.<sup>1</sup> Since 2011 a joint Turco-Italian Archaeological Expedition directed by Nicolò Marchetti renewed the excavations at the Turkish side of the site.<sup>2</sup> One of the main aims of this new project

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\* S. Pizzimenti (Sapienza University of Rome) wrote sections 3.1, 3.4, 4. G. Scazzosi (University of Pavia) wrote sections 2, 3 (introduction), 3.2, 3.3. Sections 1 and 5 have been written together.

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<sup>2</sup> For summary and references on the Turco-Italian excavations, see Marchetti 2014; 2015a; 2015b.

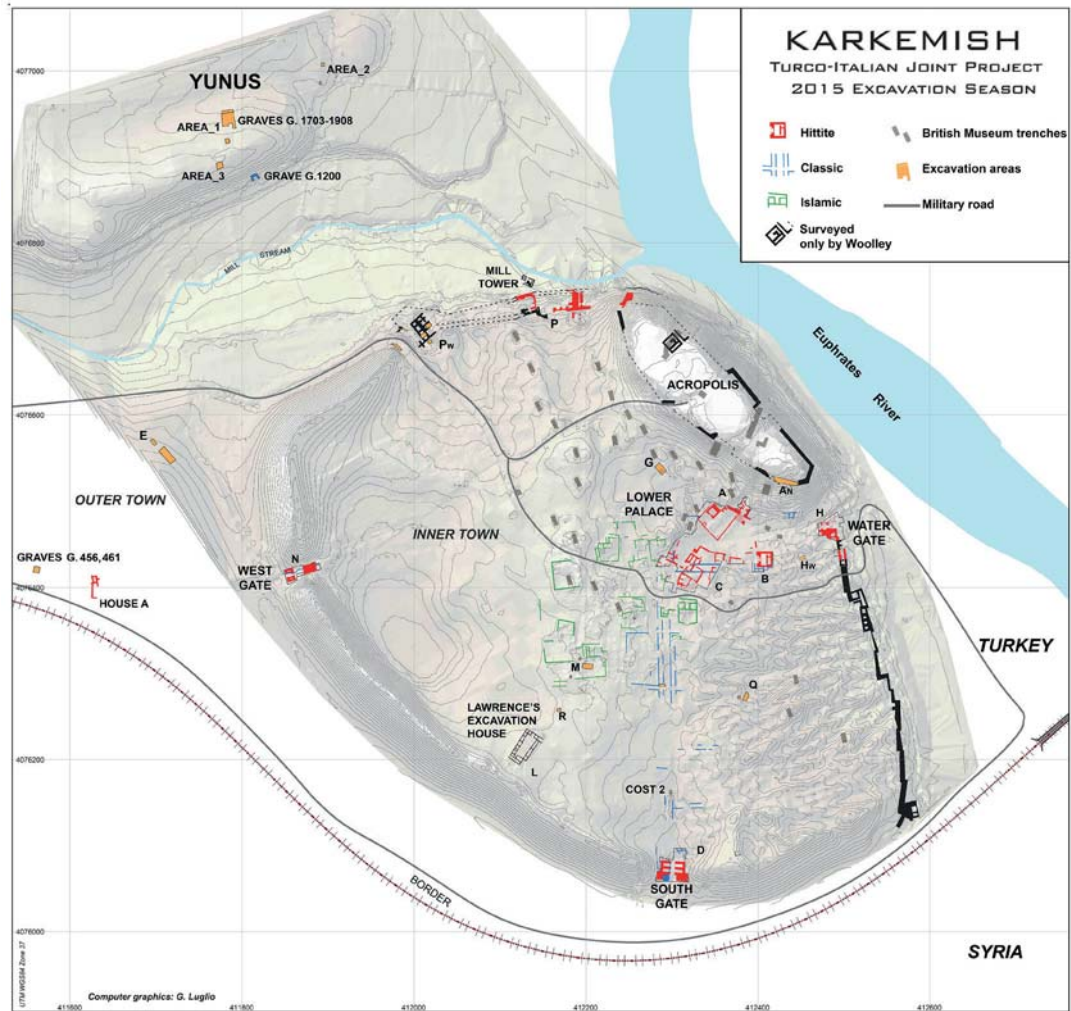


Fig. 1. Topographic map of Karkemish.

is that of exposing the Late Bronze Age town, in order to understand the urban history of Karkemish during this period, since a detailed understanding of the development of the urban structure and the history of the city during the Late Bronze Age was missing.<sup>3</sup>

<sup>3</sup> The investigation of the site in its entirety has faced several problems. Firstly, the construction of the Aleppo-Baghdad railway destroyed a significant part of the Outer Town archaeological remains. Furthermore, part of the ancient site lies today in Syrian territory and is partly covered by the modern city of Jerablus. Finally, around 1956, after several problems with the smugglers, the border between Turkey and Syria was mined, including the site of Karkemish for most of its parts. After 1998, thanks to the sign of the Ottawa treaty, it was decided that the archaeological site must be demined. However, this operation took several years to be launched and the site became completely free of mines only in 2011 (Marchetti 2014, 36; 2015a, 18-19).

## 2. THE LATE BRONZE AGE IN THE MIDDLE EUPHRATES VALLEY

The Late Bronze Age in the Middle Euphrates Valley was a period of significant political and cultural transformations. Different contending political entities including Hittites, Assyrians, Mitannians and at times even Egyptians, as well as local groups, sought to control the main centers and surrounding landscapes.

Extensive surveys and excavations<sup>4</sup> carried out along the Middle Euphrates and its tributary streams provided a remarkable support to the reconstruction of the late 2<sup>nd</sup> millennium BC political scenario and settlement strategies (Wilkinson, Peltenburg and Barbanes Wilkinson 2016). According to the later study, the understanding of settlement trends in the Late Bronze Age within the area surrounding Karkemish is quite nuanced. The gradual decline of settlements attested from the Early and Middle Bronze Age, seemed to continue until the end of the 2<sup>nd</sup> millennium BC. The rural landscape in the vicinity of Karkemish was sparsely occupied and along the river sides were several fortified towns and villages (Lawrence and Ricci 2016: 51-53).

## 3. THE LATE BRONZE AGE AT KARKEMISH

The LB I remains quite an obscure period at Karkemish historically, with the epigraphic evidence suggesting that the city was probably under the hegemony of Mitanni during the 16<sup>th</sup> century BC and then under the Egyptian influence, while in the second half of the 14<sup>th</sup> century BC the city came under the control of the Hittite king Šuppiluliuma I (Marchesi, Peker and Hawkins 2012: 143). The “Deeds” written by Muršili II, son of Šuppiluliuma I, describe in detail the Hittite conquest of the city, after a great battle, and the beginning of the Hittite dominance at Karkemish (Del Monte 2008: 110-119). This text suggests that Karkemish in the 14<sup>th</sup> century BC was a very rich urban center and the seat of an important cult devoted to the goddess Kubaba. After the conquest, Šuppiluliuma I transformed the city into a regional capital and entrusted his son Piyašili, who changed his name in Šarri-Kušuh, to rule over the city (De Martino 2014: 86; Lawrence and Ricci 2016: 64).

According to the epigraphic as well as the archaeological evidence, LB Karkemish became one of the most important administrative centers under the Hittite control, with a primary cultural, political and commercial role also as a bridge between the Anatolian plateau and Inland Syria (De Martino 2014: 91; Mora 2014: 94). After the collapse of the Hittite Empire in the early 12<sup>th</sup> century BC, Karkemish became the capital of an independent kingdom that collected the empire’s legacy (Hawkins and Weeden 2016: 10).

<sup>4</sup> Beside the *Land of Carchemish Project*, salvage excavations and surveys have been carried out on the Syrian side, following the construction of the Tishrin dam (Del Olmo Lete and Montero Fenollós 1998) and the Tabqa dam (Wilkinson, Miller, Reichel, Whitcomb 2004). Other major LB sites in the area include El-Qitar (McLellan 1986), Tell Hadidi (Dornemann 1981), Tell Banat (McLellan 2007), Tell Bazi (Otto 2014), Tell Fray (Matthiae 1980; Bounni and Matthiae 1980) and Emar (Margueron 1975; 1977; Caubet 2014). On the Turkish side intensive surveys have been undertaken in the frame of the Tigris-Euphrates Archaeological Reconnaissance Project (Algaze 1990; Algaze, Breuninger and Knutstad 1991; Algaze, Breuninger and Knutstad 1994) in the areas of the Karkamish dam and Birecik dam reservoirs. In this area two Late Bronze Age sites, Şavi Höyük I (Dittmann 2003) and Horum Höyük (Marro, Tibet Ergeç 1998) have been identified.

The archaeological evidence dating from the LB was reached only in some limited areas by the British excavators, especially in the Lower Palace Area (Woolley and Barnett 1952). Further evidence on the urban structure of the city during this period has been recently added by the joint Turco-Italian Expedition (Marchetti 2015b: 365). In particular, the LB I architectural remains are more frequently attested throughout the site, while the structural evidence dating from the LB II is scantier. As for the domestic and residential contexts, the excavations in area A, located in the Lower Palace Area, provided LB I remains. At the southern foot of the acropolis, the deep sounding excavated in Area G revealed a long stratigraphic sequence ranging from the Middle Bronze I to the Islamic period, also including several LB I and LB II phases. Further evidence for the Middle Bronze II and Late Bronze I periods have been retrieved below the Iron Age floors of the Hilani, currently identified as area B. Furthermore, below the Iron Age city gates of the Inner Town some LB I layers have been exposed.

### 3.1 The South Gate (Area D) and the West Gate (Area H)

The South Gate of the Inner Town (Area D) has been brought to light during the British Museum Excavations, which exposed an impressive structure, consisting of two towers, each one fronting three piers and set against the ramparts, while a roadway runs through the towers, and at the ends of the piers from the three doorways across it (Woolley 1921: 82-95, pl. 12.).

In the 2011-2013 campaigns, the Turco-Italian Archaeological Expedition resumed the excavations, newly investigating the complex stratigraphical sequence of the South Gate area and providing several new architectural and chronological data, particularly on the outer defense buttresses to the South (Marchetti 2012: 141). Furthermore, a sounding of 1.50 × 1 m, located at the north-eastern corner of the gate, revealed a LB I occupation of the area, exposing part of a beaten earth floor (L.2256) covered by a 50 cm thick ashy layer.<sup>5</sup>

The Water Gate (Area H) is located at the eastern end of the site, facing the Euphrates river. Besides the preserved remains of the British excavations (Woolley 1921: 103-110, pl. 16), the area is heavily disturbed by erosion and later superimpositions (Roman and Islamic) that completely destroyed the northern part of the Iron Age gate. The excavations carried out by the Turco-Italian Expedition, during the 2012 and 2013 campaigns, newly investigated the stratigraphic sequence, showing any preserved Bronze Age gate. However, the enlargement of the area toward South exposed traces of a LB I occupation, with the recovery of part of a storage room with mudbrick walls and beaten earth floor. Although disturbed by later pits, many stone tools, few bronze fragments, and many Simple and Preservation Ware sherds – large jars and pithoi<sup>6</sup> – have been collected from the stratum overlaying the floor.

<sup>5</sup> At the present state of the research, due to the small extent of the LB I strata and to the few related materials, no certain interpretations can be proposed, even though the thick ashy layer covering the floor L.2256 suggests that a destruction took place.

<sup>6</sup> Bio-archaeological analyses of the soil revealed the presence of wheat remains, probably preserved inside the pithoi.



### 3.2 Area B

In area B, in the Lower Palace Area, between 2011 and 2012 the Turco-Italian Expedition resumed and completed the excavation of the so-called Hilani, previously investigated by British archaeologists (Woolley and Barnett 1952: 176-184, pl. 38)<sup>7</sup>. A sounding cut during the 2011 season reached beaten earth floors (L.172 and L.175 to the South) dating to the LB I on the basis of the pottery assemblage, thus assigning a construction date for the Hilani after LB I (Marchetti 2016: 378). In addition to this, some basalt reliefs, which probably were part of the original decoration of the building, were retrieved by both Woolley<sup>8</sup> and the Turco-Italian Expedition.<sup>9</sup> According to a recent analysis by N. Marchetti (2016: 379-381), they share iconographic and stylistic features with the bull-men reliefs found in the Storm-God Temple in Aleppo (Kohlmeyer 2009), dating from the LB II.

As a result, thanks to the stratigraphic relations between the so-called Hilani and the earlier phases reached in the soundings, and to the iconographic analysis of the reliefs, the Hilani would seem to have followed the tradition of the temples, like the Storm-God temple in Aleppo (Kohlmeyer 2009), first built and decorated during the LB II and then gradually enriched until the Iron II period.<sup>10</sup>

### 3.3 Area A

The area excavated during the 2014 and 2015 campaigns (Marchetti 2015b: 365; Scazzosi and Zaina forthcoming) is located in the Lower Palace Area, North-East of the Storm-God Temple and North of the Royal Gate House and the Great Staircase, structures already partially excavated by Woolley (Woolley and Barnett 1952). This new sector opened by the Turco-Italian Expedition revealed the presence of LB phases at the foot of the Acropolis. According to the evidence insofar brought to light, this sector of the city provides an almost unique opportunity to investigate this period in a residential area.

The most intriguing architectural evidence is a large building, named Building 1, pertaining to phase 3 of the area<sup>11</sup>, only two rooms of which have been investigated<sup>12</sup> (Fig. 2). Two structural sub-phases characterized by the reconstruction of floors or restoration of walls have been observed. The later sub-phase (3a) provides the most complete plan of the building dated from LB I. In the first room (L.4465) the northern and western walls are about 90 cm high and they are made of mudbricks coated with a layer of white plaster (Fig. 3). The southern

<sup>7</sup> For an updated plan of the so-called Hilani see the aerial orthophoto in Marchetti 2014: fig. 5.

<sup>8</sup> A standing bull-man holding a lotus plant (Woolley and Barnett 1952: pl. B.49a).

<sup>9</sup> The first one – KH.12.O.255 – is the bottom part of an orthostat with a standing bull-man, found in two pieces, while KH.11.O.210 represents two hands, probably of a bull-man (Marchetti 2016: 381).

<sup>10</sup> Woolley assigned to it only a very generic early construction date, before the 9<sup>th</sup> century BC (Woolley and Barnett 1952: 182).

<sup>11</sup> This is a preliminary periodization only related to the 2014-2015 excavations in this sector of area A and not including the entire area (with the Storm-God Temple and the Great Staircase) (Scazzosi and Zaina forthcoming).

<sup>12</sup> As for the area excavated thus far, the building is not preserved in its southern and eastern limits, due to the Iron Age structures.

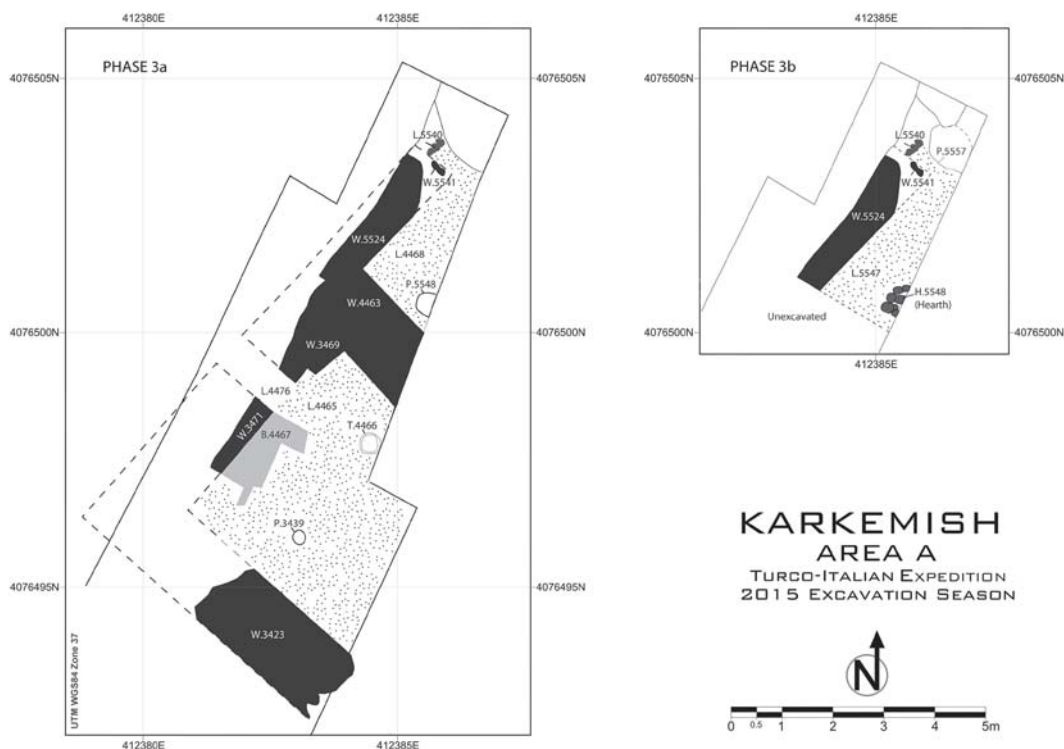


Fig. 2. Karkemish. Area A: Plan of phase 3a on the left and 3b on the right (drawn by G. Scazzosi).

one is instead made of medium-size stones and interpreted as the exterior boundary wall.<sup>13</sup> The eastern limit of the room was destroyed by a British sounding at the top of the Staircase.<sup>14</sup> The pavement of the room is well preserved, except for the portion adjacent to the northern wall, which is more ruined. Inside the room we found the remains of two installations: a badly crushed oven and part of a mudbrick L-shaped bench leaning against the western wall. Several objects were also recovered in this room, including stone tools (grinders, grindstones and a pestle), a mould for metal tools, a bone needle, and some metal objects (among the most remarkable bronze pieces are two small needles, an arrowhead and a pin). Investigations in the second room (L. 4468) revealed a similar pattern, with an assemblage mostly consisting of stone tools. The pottery horizon includes shapes dated to the LB I period, among which are many dishes and bowls, a slightly carinated beaker probably used for drinking beer and wine (also according to a functional comparison with Tell Bazi (Otto 2014: 92; 96), a series of storage jars and few large pithoi, one of which full of wheat<sup>15</sup>, which represent a hallmark of the period in the Middle Euphrates Valley (Dornemann 1981: fig. 8.3-4; Otto 2014: 110).

<sup>13</sup> The western wall is only partially preserved, because of the presence of a sequence of later floors, which had cut the brick wall.

<sup>14</sup> In 1911 Lawrence and Hogarth excavated a sounding 5.50 m deep (Woolley and Barnett 1952: 232-233).

<sup>15</sup> The study on the palaeobotanical remains is still ongoing.

The excavations of Building 1 brought to light 338 faunal remains. While almost 70% of the remains cannot be determined, due to their poor preservation, the rest of the sample indicate a rather differentiated faunal composition. 63% of the remains pertain to sheep and goats. Bovines represent only 15% of the remains, while pigs account for less than 9%. A few dog remains were also detected, along with a fish vertebra.<sup>16</sup>

On the basis of the available data, it is possible to preliminarily interpret the building as a residential structure of some importance, having elaborate wall shapes and large rooms.

Perhaps some productive activities took place in the excavated part of the building, due to the presence of the oven and of the tools used for food processing, as well as the high quantity of faunal remains. Moreover, the large pithos and the storage vessel sherds suggest some kind of storage activities.

The earliest sub-phase of Building 1 (phase 3b) has been so far investigated only in the northern room (L.5547). The floor is not well preserved in the entire room and it presents many traces of charcoals and burnt soil. On the floor there was a circular hearth made of medium-size stones. Although no objects come from this sub-phase, the function of the room seems to have been the same, since charcoals, burnt traces and the hearth suggest domestic activities involving the use of fire, perhaps food preparation and cooking.

Below Building 1, part of another dwelling, called Building 2, has been exposed. We have recognized two sub-phases (4a and 4b), both very badly preserved, sharing the same perpendicular walls (W. 5555 and W. 5556), and presenting several re-pavings. The walls are only few centimeters high and the floors are made of compact clay, coated with a layer of plaster. Almost no objects and only few pottery sherds have been recovered. Therefore, a reconstruction of the rooms' function and also their dating (probably a transition period between LB I and MB II) would be extremely tentative.<sup>17</sup>



Fig. 3. Area A: Room 1 of Building 1, phase 3a. The numbers indicate the stratigraphic units. 1: W. 3423; 2: W. 3471; 3: W. 3469; 4: L. 4465; 5: T. 4466; 6: B. 4467.

<sup>16</sup> We wish to thank E. Maini, the zooarchaeologist of the Turco-Italian Expedition, for the information on the faunal assemblage, publication of which is forthcoming.

<sup>17</sup> Below Building 2, other occupation phases of the area have been exposed. Phase 5 corresponds to a period of abandonment, when the area was used as a graveyard (the anthropological remains from the graves are still being

### 3.4 Area G

Area G is located at the foot of the Acropolis, west of the Lower Palace Area, in a sector already partially investigated in 1879 by the British consul P. Henderson.<sup>18</sup> The 2012-2014 excavations by the Turco-Italian Archaeological Expedition revealed a long stratigraphic sequence (19 phases) ranging from the Middle Bronze Age (henceforth MB) I to the Early Islamic period.<sup>19</sup> The later phases (Iron Age III to Early Islamic) have been exposed through the entire area, while the early Iron Age (I-II) and the LB and MB periods have been reached only in a 3.5 × 3.5 m sounding located at the south-eastern end of the area.

With regards to the LB period, the sounding provided significant informations, including an almost uninterrupted sequence (Phases 13-16) consisting of traces of domestic buildings and installations with open areas.



Fig. 4. Area G: floor L.2339 and *tannur* H.2336 (Phase 15).



Fig. 5. Area G: pebble roadway L.2321.

From the MB II/LB I transition (Phase 16)<sup>20</sup> to the LB I period (Phases 14-15), the area had a residential function. Indeed, traces of a domestic building have been recovered at the southern corner of the sounding. However, it is not possible to reconstruct the complete

studied by Rula Shafiq). This phase is dated to the MB I period, according to the 14C analyses. Finally, some remains of an earlier building, called Building 3, have been recognized, but not yet excavated.

<sup>18</sup> Chermiside H. (1879) in Hogarth 1914.

<sup>19</sup> A preliminary study of the stratigraphic sequence and related pottery assemblage of the latest phases of the area has been recently published by C. Cappuccino e K. Ferrari (Cappuccino and Ferrari 2016). The final report of the area is actually in progress (Ferrari, Pizzimenti and Zaina forthcoming).

<sup>20</sup> Phase 16 is dated to the MB II/LB I transitional phase according to the analysis of the pottery assemblage and to the radiocarbon analysis made on some charcoal samples (1700 BC (93.4%) 1500 BC).

plan of the building, due to its dimensions. The excavation brought to light three superimposed earthen floors (L.2330 and L.2339 – Phases 14-15; L.3805 – Phase 16), associated with a flimsy mudbrick wall (W.3813) and a *tannur* (H.2336) located in the south-eastern corner of the sounding (Fig. 4).

During the LB II (Phase 13), the domestic building was abandoned and obliterated by a pebble roadway (L.2321). This evidence suggests a change taking place in the area and lasting until the Iron Age II period (Fig. 5).

#### 4. THE POTTERY ASSEMBLAGE

The Late Bronze Age pottery assemblage from Karkemish consists of approximately 1,827 diagnostic collected sherds (rims, walls and bases) and complete shapes.

Simple Ware<sup>21</sup> is the most popular so far attested (81% ) while both Kitchen Ware<sup>22</sup> (7%) and Preservation Ware<sup>23</sup> (12%) are poorly represented.

Preliminary analysis revealed that both morphological and technological variations in the assemblages are somewhat nuanced within the two phases, highlighting a strong continuity and gradual development of pottery types. Indeed, LB I and II are mainly represented by the quantitative occurrence of certain shapes or surface treatments rather than their abrupt emergence or disappearance.<sup>24</sup>

##### 4.1 The Late Bronze Age I Pottery Assemblage

The LB I pottery assemblage can be fit within the “Northwestern-Syrian pottery tradition”<sup>25</sup>, with sites such as Tell Bazi (Einwag 2007; Otto 2014), Tell Hadidi (Dornemann 1981), Tell el-Qitar (McClellan 1985; 1986a; 1986b; 2007), and Emar (Caubet 2014), and the Inner Syria pottery traditions, with Tell Mardikh-Ebla (Colantoni 2010; 2014) and Tell Afis (Venturi 2007; 2014) as the best parallels. It presents a general continuity of traits with the previous MB II<sup>26</sup> and the following LB II ceramic horizons.

<sup>21</sup> Vessels for serving and processing activities except cooking. Simple Ware embraces almost all the vessel shapes, from platters to jars, fired at medium to high temperature (600-900 °C). Simple Ware shapes may have different kinds of surface treatments and decorations (Zaina 2013: 66).

<sup>22</sup> Vessels used for processing activities involving cooking. Few shapes can be statistically connected to this functional class, among which pots are most notable. These are usually fired up to 500 °C with inclusions usually occurring in medium to large dimensions and a high frequency. Surface treatments or decorations are rarely attested (Zaina 2013: 66).

<sup>23</sup> Large storage containers or transport vessels. Jars or pithoi are the most common shapes. Preservation ware is usually medium to low-fired, with many medium to large-size inclusions. Several types of decoration or surface treatments are attested (Zaina 2013: 66).

<sup>24</sup> Akkermans and Schwartz (2003: 331) have pointed out that, from a standpoint of material culture (especially pottery) there are at the present no unequivocal criteria to justify the internal subdivision of LB I and LB II (Iamoni 2012: 24).

<sup>25</sup> For a definition and analysis of the “Northwestern-Syrian pottery tradition see McClellan 2007 and Pfälzner 2007: 257.

<sup>26</sup> See for example the MB II/LB I transitional phase in area G.



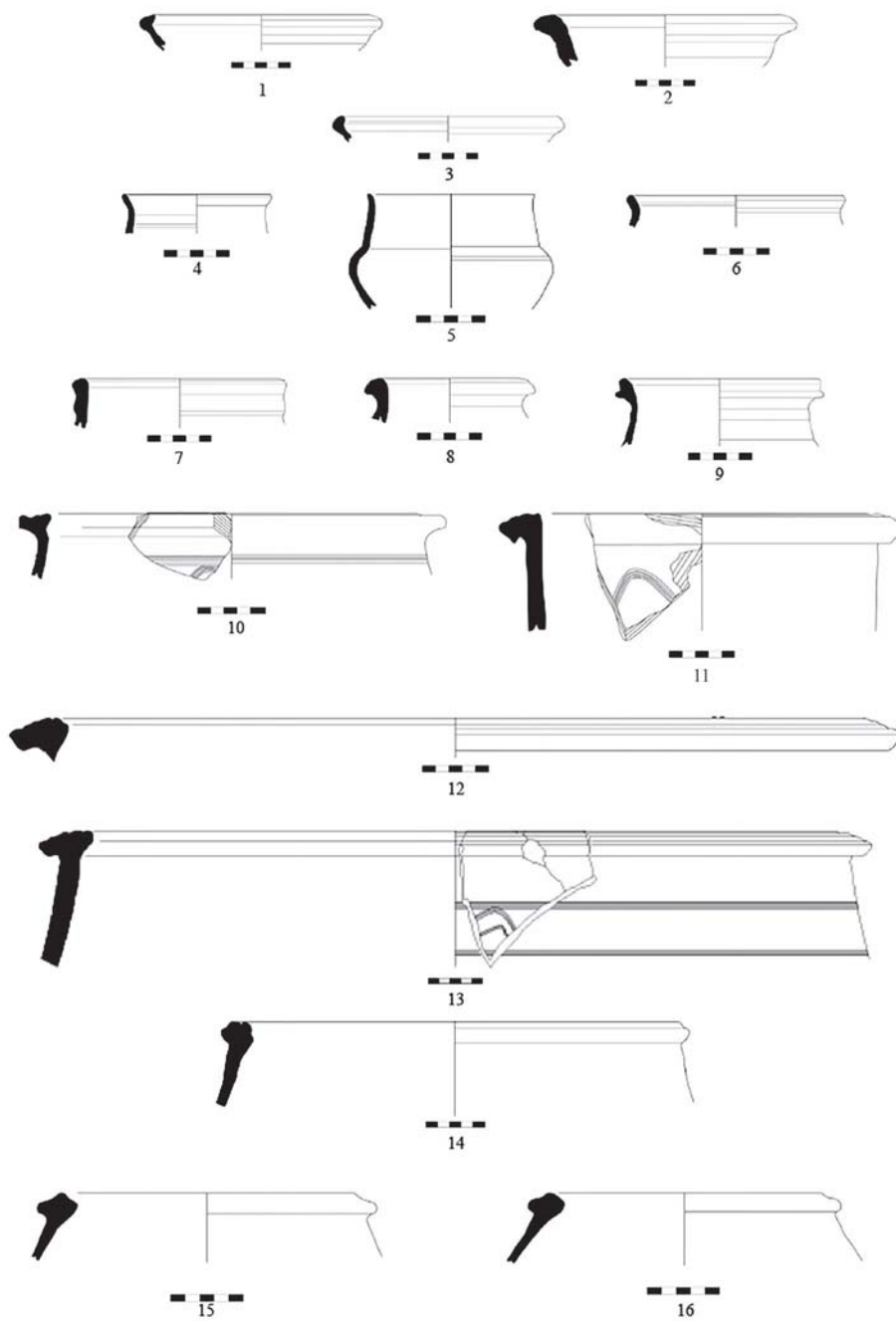


Fig. 6. Late Bronze Age I pottery assemblage.

Simple Ware open shapes are the most attested, with the shallow and hemispherical bowls with slightly in-turned and thickened rims as the most popular types (Fig 6: 1-3).

Closed shapes include small jars with globular or carinated body and flaring rim (Fig. 6: 4-6), as well as jars with slightly everted, ribbed or outwardly-thickened rim (Fig. 6: 7-9). Other types of jars may have also a narrow mouth often characterized by expanded-grooved rim and combed (wavy line) decorations (Fig. 6: 10-11).

Preservation Ware includes large pithoi with grooved rims and large jars with expanded rim both with combed (wavy line) decorations (Fig. 6: 12-13)<sup>27</sup>. Other typical LB I shapes at Karkemish are jars with thickened ribbed rim (Fig. 6: 14).

Kitchen Ware, mainly recovered in the domestic contexts of areas A and G, is represented by a handful of cooking pots with outwardly folded rim (Fig. 6: 15-16).

Surface treatments are quite rare and include mostly White Slip (20%), while burnishing is limited (5%). Both Simple and Preservation Ware testify to a large use of comb-incised – horizontal and wavy lines on the upper part of the shoulder – (41%) and grooved decorations (39%).<sup>28</sup> About 80% of the LB I Simple Ware pottery assemblage have fine homogeneous fabrics with a low frequency (<3%) of small (<0.5mm) mineral inclusions. Two different fabric types can be distinguished for the LB I Preservation Ware. About 47% of the collected diagnostic sherds have a fine fabric with a low frequency (<3%) of small (<0.5mm) inclusions, while 39% have a coarser fabric with a medium frequency (3-10%) of small (<0.5mm) inclusions. Among fabric colors, pinkish (7.5YR 7/4, about 42%), light brownish (10YR 7/3-4, 8/2-3, about 29%) and reddish yellow (5YR 7/6, about 19%) are the most attested.

## 4.2 The Late Bronze Age II Pottery Assemblage

The Late Bronze Age II pottery assemblage is quite limited, due to the paucity of LB II levels so far exposed, but denotes a strong continuity with the previous LB I pottery assemblage. Among open vessels, both shallow and hemispherical bowls with simple and outwardly-thickened rim and slightly inturned rim are attested (Fig. 7:1-3), as well as large deep bowls with straight walls and internally thickened rim (Fig. 7: 4). Closed shapes include jars, jugs and juglets with slightly everted rim, simple, outwardly thickened, both with rounded and triangular sections, and ribbed (Fig. 7: 5-7).

Preservation Ware includes kraters with expanded rectangular rims (Fig. 7: 8-11) and jars with out-turned thickened rims.

Surface treatments are quite rare and include mostly White Slip (15%), while burnishing is limited (4%). Fabric type and color denote a strong continuity with the LB I period. About 70% of the Simple Ware LB II pottery assemblage have fine homogeneous fabrics with

<sup>27</sup> This type is well attested both in the Middle Euphrates and Inner Syria pottery tradition from the MB II period (see Dornemann 2007; Nigro 2002).

<sup>28</sup> The comb-incised decoration, usually placed under the rim, is very common both in Inner Syria and in the Middle Euphrates region, as can be noticed in Tell Afis (Mazzoni 2002: pl. 59.27), Tell Hadidi (Dornemann 1981: fig. 14, 23-28; fig. 15, 2, 4-5) and El-Qitar (McClellan 2007: pl. 3. 3,7).

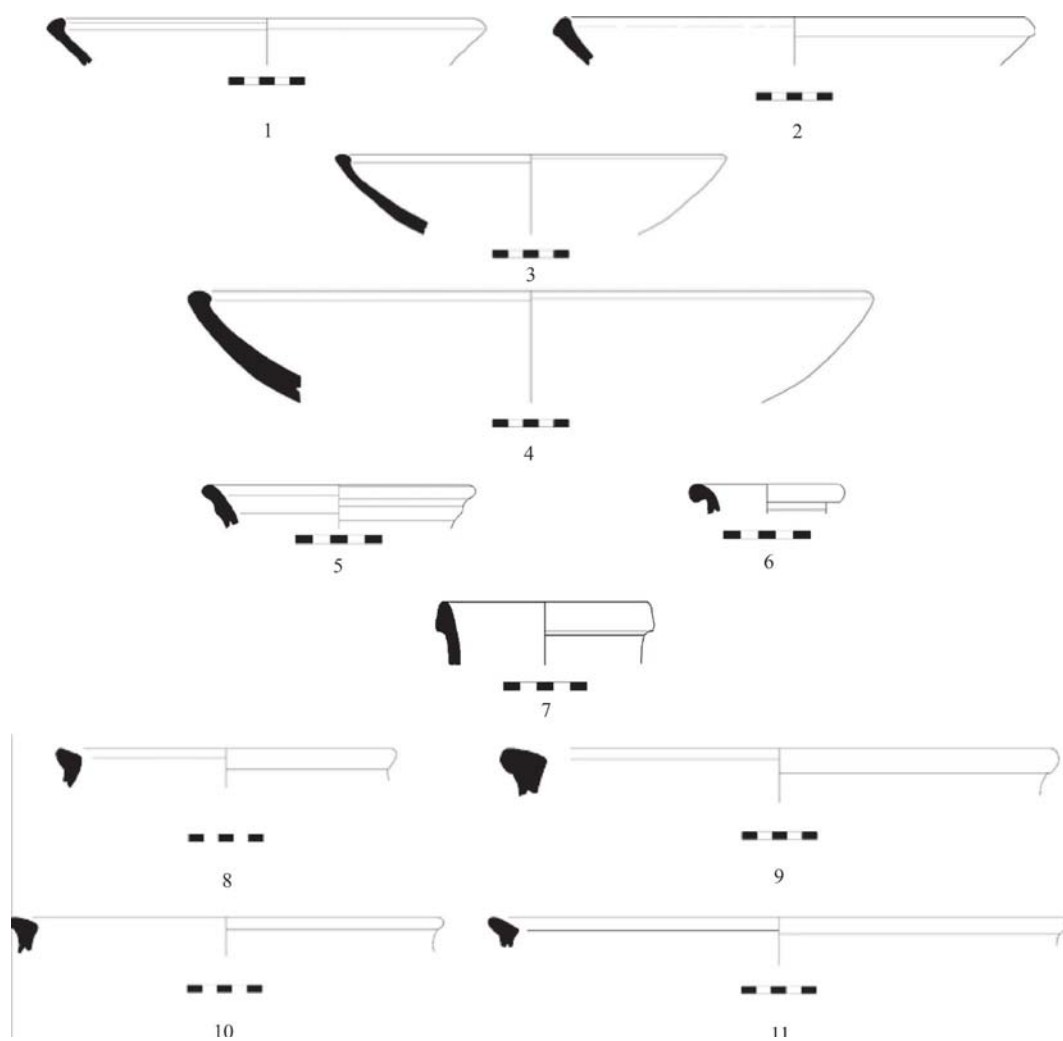


Fig. 7. Late Bronze Age II pottery assemblage.

a low frequency (<3%) of small (<0.5mm) mineral inclusions, while two different fabric types can be distinguished for the LB II Preservation Ware. About 53% of the collected diagnostic sherds have a fine fabric with a low frequency (<3%) of small (<0.5mm) inclusions, while 38% have a coarser fabric with a high-medium frequency (3-10%) of small (<0.5mm) inclusions. Among fabric colors, pinkish (7.5YR 7/4, about 35%), light brownish (10YR 7/3-4, 8/2-3, about 20%) and reddish yellow (5YR 7/6, about 17%) are the most attested.

## 5. CONCLUSIONS

On the basis of the evidence presented in this paper, some preliminary conclusions can be proposed. We can now confirm the hypothesis proposed by Woolley, that the Outer Town dates from the Iron Age. Indeed, the Turco-Italian excavations in areas E (Zaina in press) and F (Bonomo and Zaina 2016), and the survey carried out in the frame of the *Land of Carchemish Project* (Wilkinson, Peltenburg and Barbanes Wilkinson 2016), confirm the absence of LB materials.<sup>29</sup>

Several LB phases in different areas of the Inner Town have been investigated by the Turco-Italian Archaeological Expedition. In the Lower Palace Area and at the footstep of the Acropolis (Areas A and G), residential and domestic areas have been exposed. Below the gates of the Inner Town no evidence of fortified structures preceding the Iron Age period have been uncovered.<sup>30</sup> In Area H the Iron Age gate is directly placed on the bedrock and the only Late Bronze remains are represented by a storeroom. At the South Gate, the Late Bronze I phase only consists of an isolated floor recovered in a small sounding.<sup>31</sup>

The Late Bronze Age pottery assemblage reveals a strong continuity in the pottery types from the LB I to the LB II period, with nuanced morphological and technological variations within those two phases. Parallels with the Northern Levant and Middle Euphrates assemblages in LB I are well attested, while almost no Hittite influence can be noticed for the LB II period. A transitional MB II/LB I period has been identified in Area A (Building 2) and G (Phase 16), highlighting a probable strong continuity in material culture from the Middle Bronze to the Late Bronze Age as well.

Finally, at the present state of the research, the excavations seem to confirm a destruction of the city at the transition between the LB I and LB II periods (Marchetti 2015a: 19; Marchetti 2015b: 365; Marchetti 2016: 374), as testified by thick layers of ashes and burnt soil associated with LB I period materials recovered in many areas of the Inner Town, such as Areas

<sup>29</sup> Barbanes Wilkinson and Ricci (2016, 165) do not completely exclude the possibility that the Outer Town was already settled from the reign of Šuppiliuma, even though the available evidence is not sufficient, yet. For a more recent discussion on the chronology of the Outer Town, see Zaina in press.

<sup>30</sup> It must be considered that the LB gates could have been destroyed by the construction of the later Iron Age fortifications and gates.

<sup>31</sup> Additional late 2<sup>nd</sup> millennium BC structures documented in the Inner Town are two mudbrick walls probably with defensive function. One is located at the Water Gate and the other near the top of the Acropolis. Moreover, area P, very close to the famous Gold Tomb, discovered in 1920 by Woolley (Woolley 1952: 250-251), is being currently excavated and it is giving very preliminary data on the LB II evidence (Marchetti 2015b: 365-366).

H and D.<sup>32</sup> Although such an interpretation remains hypothetical, it is attractive to relate this phase with the capture of the city by Suppiluliuma I in the early 14<sup>th</sup> century BC, as described by his son Mursili II in the “Deeds” (Marchetti 2015a, 20). Between LB II and Iron I instead, Karkemish did not suffer any destruction. Indeed, the Turco-Italian excavations confirm the interpretation proposed by Hawkins and Weeden (2016: 10), that the city was not destroyed in the 12<sup>th</sup> century BC, despite of the claims to the contrary by Ramesses III.

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<sup>32</sup> Building 1 in Area A was probably abruptly abandoned, since some valuable objects, along with a big pithos full of wheat, have been left in the room, while in area G there is no evidence of a great destruction.



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## THE GADACHRILI GORA REGIONAL ARCHAEOLOGICAL PROJECT: 2016 PRELIMINARY REPORT

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### **Abstract**

*The Caucasus has long been seen by western scholars as marginal to developments in the Near East. However, recent discoveries in the region have rapidly and significantly begun to show that the Caucasus was much more deeply integrated into the Near Eastern world in ways that are yet to be explored. In regard to the Neolithic period, studies in Georgia have the potential to contribute significantly to our overall understanding of the Neolithic process of the Near East, examining the development of different horticultural and agricultural products that will eventually comprise of the 'Neolithic package' and the evolution between human groups and their environment during the Holocene period of the greater Near East. Because of this geographical situation, the excavations of Gadachrili Gora and Shulaveris Gora (Kvemo Kartli Region) offer new opportunities to contribute to the debate on the neolithisation of the Caucasus, focusing on the of understanding of the development of the Shulaveri-Shomu Culture, its settlement organization and economy, and its relationship to other late Neolithic cultures in the greater Near East. Since 2006, a team of researchers from the Georgian National Museum, working in close collaboration with international colleagues, has been engaged in archaeological investigations at the site of Gadachrili Gora, which revealed the exceptionally well-preserved remains of a succession of settlements spanning the terminal parts of the Neolithic Period (ca. 6000-5000 BC).*

*This preliminary report provides an introductory background to the Neolithic Shomu-Shulaveris Culture of eastern Transcaucasia and describes the result of the initial season of the joint Canadian-Georgian initiative: The Gadachrili Gora Regional Archaeological Project (GRAPE).*

### INTRODUCTION

The Gadachrili Gora Regional Archaeological Project Expedition (GRAPE) is a joint venture between the University of Toronto, the Georgian National Museum (GNM) and the National Wine Agency of the Ministry of Agriculture (of the Republic of Georgia) to investigate the emergence and evolution of Neolithic Cultures in southern Caucasia and the development of Georgian viticulture and viniculture (Maghradze *et al.* 2017). GRAPE's role is to investigate the development of agricultural and horticultural practices across a series of rural settlements, and examine their role in the developing Neolithic economies, as well as the influence of the Shulaveri-Shomu Tepe Culture of the Republic of Georgia, Armenia and Azerbaijan on the Near East. In the spring of 2016, GRAPE undertook its inaugural season at the site of Gadachrili Gora, where we excavated six 5 × 5m trenches, one 6 × 7m trench (some previously opened, others newly opened), and a small 2 × 3m step trench. At the same time an operation

was initiated at Shulaveris Gora, excavated originally by Javakhishvili during the 1960's, clearing the old excavation area, and undertaking a  $2 \times 2\text{m}$  probe at the base of the old excavations to determine the depth of occupation at the site, along with a small  $2 \times 10\text{m}$  step trench on the west side of the mound. This work represents the preliminary results of our 2016 season.

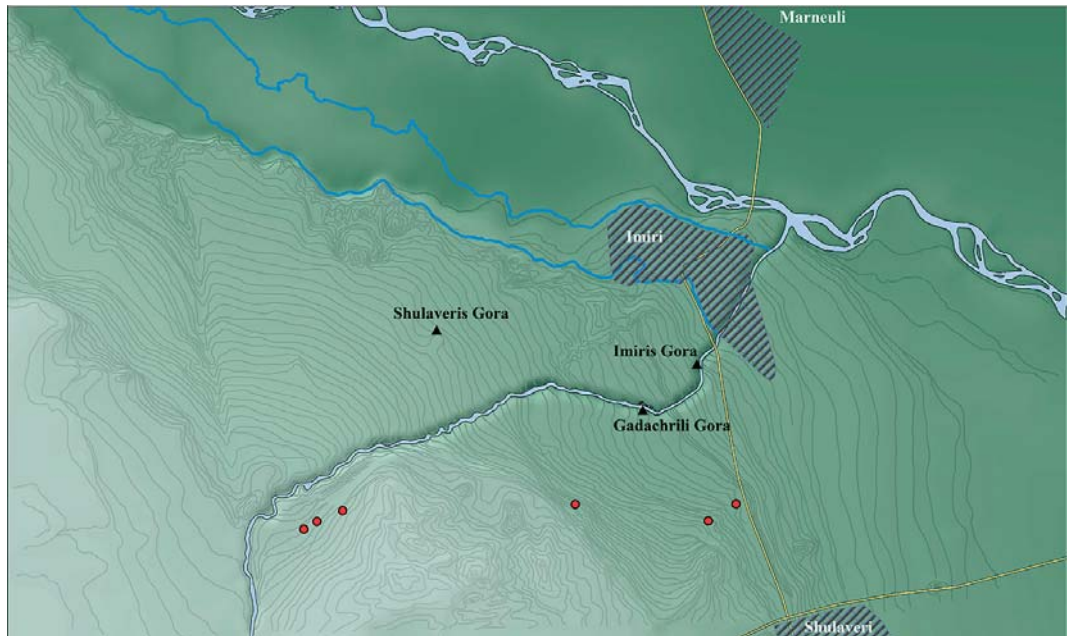


Fig. 1. Map of the Shulaveris Ghele and Khrami River region with the locations of Gadachrili Gora and Shulaveris Gora.

The Neolithic sites of Gadachrili and Shulaveris Gora are located on the Shulaveris Ghele – a seasonal tributary of the Khrami River (Fig. 1). The site of Gadachrili Gora is located to the SW of the village of Imiri, with the mound of Shulaveris located 1.7km further to the west. Together the sites form part of a constellation of Neolithic settlements that provide the Neolithic sequence for the region. Investigations into the Neolithic of the Caucasus began in the 1950's with the excavations at Kültepe in Azerbaijan (Abibullayev 1959). Subsequent investigations identified a series of settlements on the middle Kura River region, including the site of Shomutepe, excavated by Narimanov from 1961-4. At the same time, investigations in east Georgia began in the Marneuli region, focusing on the site of Shulaveris Gora (Javakhishvili 1973, Javakhishvili *et al.* 1975 – see below). Further investigations throughout the south Caucasus began to uncover a shared archaeological signature that came to be known as the “Shulaveri-Shomu Tepe Culture” (or SSC) and it was dated to between 6,000 and 5,200 BCE (Japaridze and Javakhishvili 1971; Narimanov 1987; Kiguradze 1986; Lyonnet *et al.* 2016; Hamon *et al.* 2016). The SSC has been identified at locations across south Caucasia (Fig. 2). In Western Azerbaijan (Shomu Tepe, Tojre Tepe, Babdervish, Goytepe, Hacı Elamxanlı Tepe, Mantesh Tepe, Changan, Kamil Tepe, and Kültepe I in Nakhxivan), southeastern Georgia (Arukhlo, Shulaveris Gora, Gadachrili Gora, Dangreuli Gora, Imeris Gora, and Khramis Didi



Gora) and in northern Armenia (Aknashen Kmlo-2, and Aratashen), located along smaller tributaries of the Middle Kura river in large areas of arable land. Settlements are usually small artificial mounds, rarely exceeding 1ha in size, yet often reveal a long occupational history, with heights of up to 10m.

This archaeological culture is identified through its characteristic mudbrick architecture with frequently overlapping walls. Circular structures cluster around three size categories, with the largest ranging between 2.5-5 m in diameter, and smaller structures between 1.25-2 m. Numerous smaller installations of less than 1m in diameter are frequently found in conjunction with the architecture and are generally interpreted as storage installations. Excavations at the site of Arukhlo in the Kvemo Kartli sites, as well as the Kamiltepe sites, reveal some additional unique architectural constructions such as large ditches of indeterminable use that surround and even permeate the site (Kushnareva and Chubinishvili, 1970:22-25; Hansen *et al.* 2007; Hansen and Mirtskhulava 2012; Helwing and Aliyev, 2012; Hansen *et al.* 2016). The circular nature of the structures is a unique element of the Shulaveri-Shomu culture, as by the pottery Neolithic of Anatolia and Mesopotamia, circular architecture had become less fashionable. Even the northern Mesopotamian Halaf culture, contemporary to the SSC which is frequently linked to circular (*tholoi*) architecture, produces significant rectilinear architecture at this time (Akkermans and Schwartz 2004). The identification of Halaf related materials at

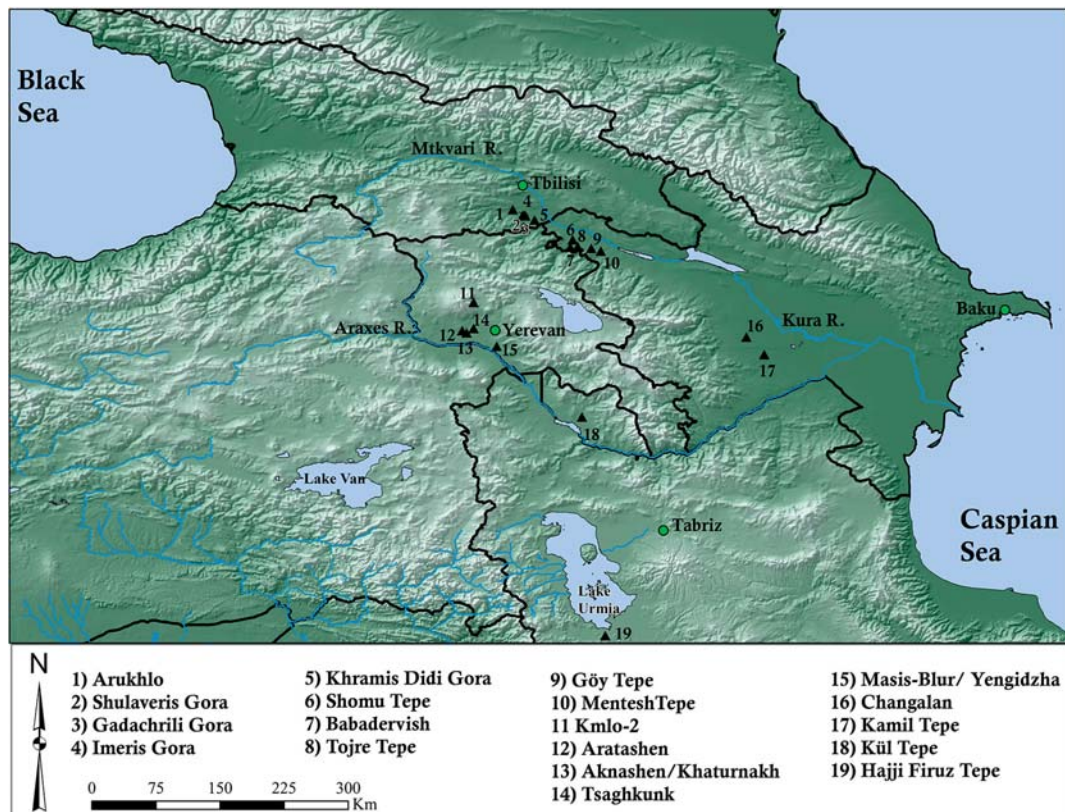


Fig. 2. Map of south Caucasia with the location of sites bearing the Shulaveris-Shomu Culture (SSC).



the site of Kültepe I in Nakhxivan (Kushnaera 1997) may be suggestive of links between the Halaf Culture of North Mesopotamia and the SSC, with some such as Nariminov going so far as to suggest a direct link by means of a migration (1987: 136).

SSC ceramics are hand-made, vegetable-tempered and lightly fired in a reducing atmosphere, with a limited range of morphological types. Decoration, where it occurs, is dominated by simple knobs and infrequently with plastic applique of human or vegetal remains. Red-polished or even painted pottery has been observed but is infrequent (Kušnareva and Čubinišvili 1970, Hansen 2012). Stone tools, in particular, obsidian blades and microliths, are extremely common and have been observed to have been used for agricultural purposes (see Fig. 12), as well as the processing of animal skins (Korobkova and Kiguradze, 1972; Korobkova 1979; Arazova, 1986). The bone tool industry is equally complex, with awls and other pointed objects being among the most frequent, highlighting a possible use in skin processing, although a number of larger cutting tools such as shovel blades or beveled perforated tools have also been observed, along with jewellery or utilitarian objects like spoons (see Fig. 13). Hints of nascent metallurgical practices have been observed at Mantesh Tepe in Azerbaijan (Lyonnet *et al.* 2015) and Aruchlo (Hansen 2012).

The SSC has been linked to advanced agriculture with the cultivation of several crops, including barley and wheat, and it had long been suggested that grapes were a primary crop due to the appearance of a motif of stylized grape bunches that appears on the walls of ceramic vessels, best exemplified by the example uncovered at Khramis Didi Gora, seen prominently on display in the Georgian National Museum (Kighuradze, 2000, Chilashvili, 2004, Decaix *et al.*, 2016). It has been suggested that this period can also be considered as a starting point for wine production, based on a preliminary study by McGovern (2003). This study examined one of the Neolithic jars from Shulaveris Gora and conducted residue analysis where it was discovered that there were possible traces of tartaric acid – the main biomarker for grapes and its by-products (e.g., wine). However, the lack of soil samples from the site to serve as a baseline for comparison to the residue analysis have resulted in a degree of ambiguity in the claim for the earliest wine production. Uncarbonized grape pips were found in the earlier excavations of both Shulaveris and Gadachrili Gora, however subsequent radiocarbon analysis has proven these seeds to be modern in date, and the result of contamination (L. Bouby, personal communication).

However, more recent work by Kvavadze has identified grape pollen in the excavations of Gadachrili Gora (Kvavadze *et al.* 2010), which provides stronger evidence for the cultivation of grapes and perhaps wine production during the Neolithic period of Caucasia.

This long tradition of viticulture and viniculture activities in Caucasia, extending as far back as the Neolithic, has had a long and indelible influence across many aspects of economic and social life in antiquity and continues to be felt to this day. It is this continued and persistent influence on Georgian culture that inspired the Republic of Georgia to initiate a research program entitled the “Research Project for the Study of Georgian Grapes and Wine Culture” of which GRAPE plays a central and fundamental role (Maghradze *et al.* 2017). Although previous excavations were initiated by the Georgian National Museum as part of the project, in 2014 GRAPE emerged from discussions between Dr. Stephen Batiuk, the Georgian National Museum and the National Wine Agency of the Republic of Georgia. Initial cooperation began

in the spring of 2015 with the excavations at Gadachrili Gora (led by M. Jalabadze) and then in 2016 the joint Georgian-Canadian excavations began in earnest with an initial six-week field school season that included undergraduate students from both Canada and the Republic of Georgia. These excavations were conducted jointly by Mindia Jalabadze, Stephen Batiuk and Andrew Graham.

#### PREVIOUS WORK IN THE REGION

Throughout the 1960s, the Lower Kartli Archaeological Expedition of the Georgian State Museum began a systematic field walking effort to recover surface finds for the purpose of site prospection (Javakhishvili 1973, Javakhishvili *et al.* 1975), eventually leading to excavations at several sites in the region, including a small test trench at Gadachrili Gora. In total, four small Neolithic settlements (between 0.5 and 1ha) were investigated; Shulaveris, Gadachrili, Imeris and Dangreuli Goras, which provide the cultural sequence of 6<sup>th</sup> millennium occupation in the region. Of these four sites, it appears that Shulaveris was the initial settlement, followed by occupations at Gadachrili and Imeris Gora, and then finally at Dangreuli Gora. Radiocarbon dates from the excavations reveal occupations from the second quarter of the 6<sup>th</sup> millennium at Shulaveri (5767-5504 Cal BC 2 $\sigma$ ) through to the first quarter of the 6<sup>th</sup> millennium at Imeris Gora (5461-5021 Cal BC 2 $\sigma$ ), providing one of the more comprehensive and important sequences for documenting the SSC (see below).

Work in the region was suspended until 2006 when the Marneuli Archaeological Expedition of the Georgian National Museum reinitiated interest and carried out small-scale archaeological investigations at Gadachrili Gora (led by M. Jalabadze). With the Shulaveris Ghele – a tributary stream of the Khrami river – cutting through the site, a clear stratigraphic section of the settlement was visible. This naturally formed section indicated two levels of occupation separated by a clearly visible thin layer of clay 15-25cm thick. During the 2006-7 seasons, an 8 × 3m test trench was excavated on the north-eastern portion of the settlement to better understand its occupational sequence and chronology.

After a brief interregnum, in 2012-2013, efforts at Gadachrili Gora were reactivated within the framework of a joint project between the Georgian National Museum and the French National Centre for Scientific Research (CNRS) conducted jointly by C. Hamon and M. Jalabadze. The trench initially opened in 2007 was expanded, along with the addition of two further trenches to the southwest (Hamon *et al.* 2015). The excavations revealed a remarkably well preserved late Neolithic village approximately 0.4ha in size, with the largest portion of the site (1250m<sup>2</sup>) located on the southern side of the Shulaveris Ghele. A total of 53m<sup>2</sup> was excavated in the 2006-7 seasons with an additional 40m<sup>2</sup> removed during the 2012-15 seasons. The excavations confirmed the two main phases of occupation, separated by a sterile clay layer between 15 and 25cm in thickness, that were visible in the natural section cut by the Shulaveris Ghele. Each phase included several sub-phases characterized by the rebuilding and construction of additional features such as storage pits. Radiocarbon dates obtained from samples recovered by these excavations established a chronological sequence for the two phases between 5920 and 5650 Cal BC (2 $\sigma$ ) (Hamon *et al.* 2015: 4-5). In 2016, the inaugural GRAPE expedition season, a further 270m<sup>2</sup> was excavated at Gadachrili Gora.

Excavations at the neighboring site of Shulaveris Gora were undertaken in the 1960's by Javakhishvili, where a large exposure of approximately 200m<sup>2</sup> was cut in the east side of the mound, revealing five levels of late Neolithic occupation. In the 2016 season, GRAPE also reopened the original excavation trench to identify any evidence of further occupation levels below the levels reached in the 1960's, and undertook a step trench along the west side of the mound in order to clarify the site formation process and to test existing stratigraphic interpretations from the 1960's effort.



Fig. 3. a: Aerial drone photograph of Gadachrili Gora showing earlier Georgian National Museum's Marneuli Archaeological Expedition's excavation areas.

b: Aerial drone photograph of Gadachrili Gora showing 2016 excavations.

## The Gadachrili Gora Regional Project Expedition

The 2016 season represents the first phase of a long-term project with the primary goal of assembling archaeological data sets of the earliest farming economies in the Caucasus region. These data sets will be the foundation upon which to examine the ‘Neolithisation’ of the region and subsequent adaptive strategies developed as agriculture was integrated into the local subsistence economies north of the Fertile Crescent. The development of the horticultural practice of viticulture, and the earliest emergence of viniculture, or wine production – which is hypothesized to have occurred in south Caucasia, will be studied as one of the successful adaptations that allowed the cultures of south Caucasia to thrive and become a long-lasting legacy of the region.

This goal will be accomplished through large horizontal exposures of the two levels of occupation at the 6<sup>th</sup> millennium Neolithic village of Gadachrili Gora (Fig. 3) – presently the oldest ceramic Neolithic settlement in east Georgia. To support this effort, a re-investigation of the neighboring site of Shulaveris Gora is necessary. This, alongside small-scale regional surveys, will not only document local geomorphological processes and identify further Neolithic settlements, but will also serve to create a more holistic understanding of the ancient and contemporary landscapes. A more intensive collection strategy was also introduced, sieving all excavated material to ensure maximum collection of ceramic, faunal and lithic material. Soil samples for paleobotanical examination are taken from each locus, and depending on the nature of the context, additional samples are taken to ensure detailed collections of botanical remains. This wide-scale and regional approach, combined with detailed micro approach at the site level has the capacity to facilitate multiple levels of analysis, and to produce the multivariate data needed to engage in more systematic investigations of the complex economic and social organizations formed by the first farming communities to emerge in this part of the world.

## CHRONOLOGY

A series of radiocarbon dates had previously been obtained from the Soviet excavations of the 1960’s and 70’s from the sites of Shulaveris, Imeris and Khramis Didi Goras, which had been undertaken by different laboratories with varied resolution (Burchuladze 1968; Burchuladze *et al.* 1975; Japaridze *et al.* 1975; Kiguradze 1976; Chubinishvili and Chelidze 1978; Chataigner 1995). Four radiocarbon dates (two from Gadachrili, and two from Shulaveris Gora) were recovered from the 2016 excavation season and submitted to the Weizmann Institute of Sciences in Israel for processing. A new radiocarbon sequence (Fig. 4), obtained by recalibrating the older radiocarbon dates employing the IntCal13 atmospheric curve (Reimer *et al.* 2013), and combining these with the newer data, reveals a sequence beginning at approximately 5875 Cal BC, with the earliest samples coming from the lower phase of Gadachrili Gora contemporaneous to the sample from the recent probe at Shulaveris Gora, and ending in approximately 5260 Cal BC at Imeris Gora, with a possible gap in occupation between Phases 2 and 3 which seems to correspond to the shift in occupation between Phase 1 and 2 at Gadachrili (Hamon’s Horizons 1 and 2; see *id.* 2015: 4-5). This may represent a larger regional phenomenon. The beginning dates for Shulaveris and Gadachrili are slightly later



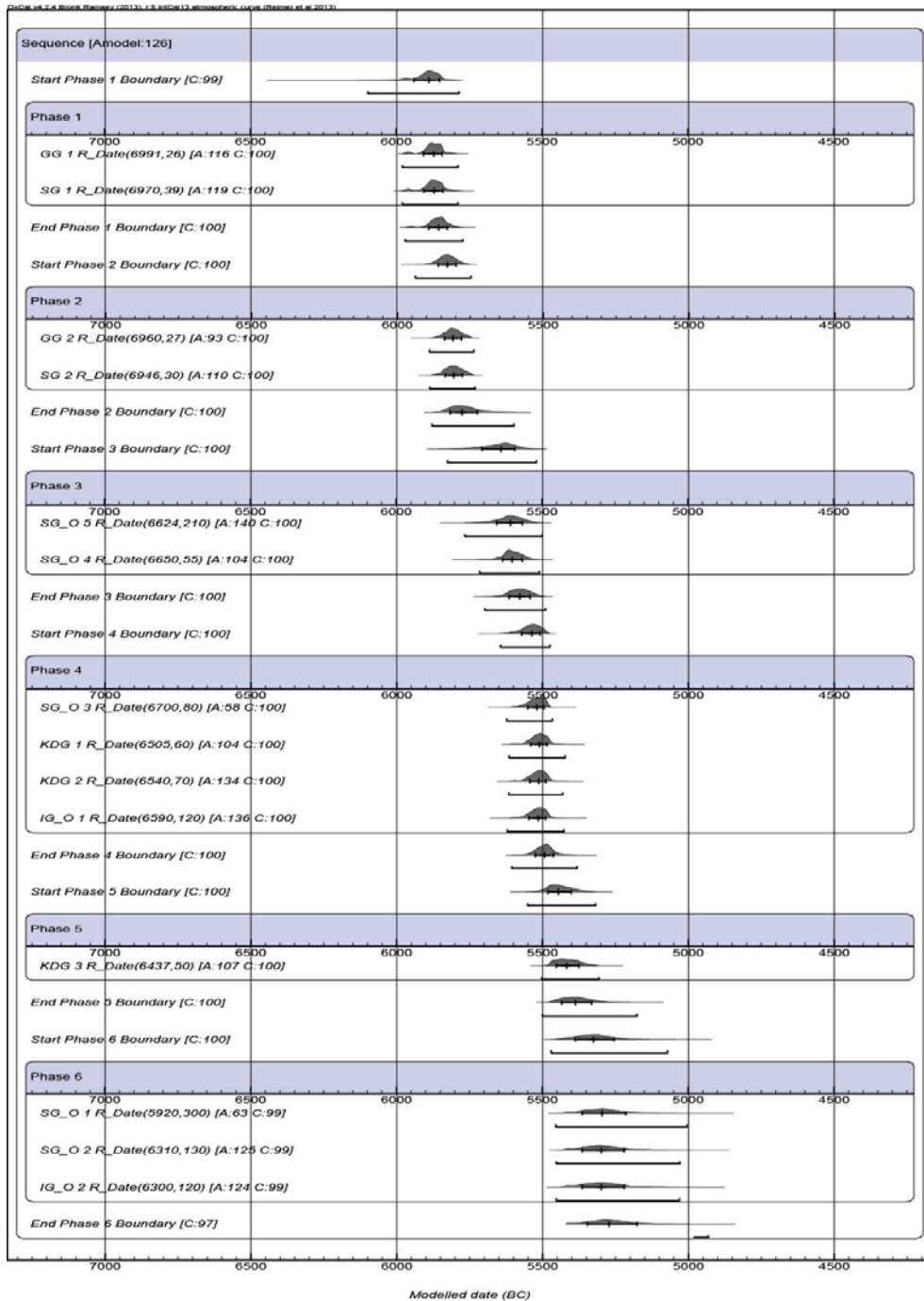


Fig. 4. Probability distributions of estimated dates with phase models of OxCal 4.2.4 (Bronk Ramsey 2013), utilizing the IntCal13 atmospheric curve (Reimer *et al.* 2013). Created using recalibrated radiocarbon dates from the older Soviet excavations and newer dates from Gadachrili and Shulaveris Gora collected during the 2016 GRAPE season.



than Hacı Elamxanlı Tepe of 5950-5800 BCE (Nishiaki 2015), however, virgin soil has still not been reached at Shulaveris Gora, leaving the potential for still further occupation contemporary to or even predating Hacı Elamxanlı Tepe. Should this be identified, Shulaveris Gora would contain the most complete and continuous occupation for the SSC, covering almost the entirety of the sixth millennium.

#### THE 2016 EXCAVATIONS – GADACHRILI GORA

Work began at Gadachrili Gora on May 6<sup>th</sup> and continued through June 12<sup>th</sup>, 2016. Despite the presence of unseasonably excessive rains, a total of four new 5 × 5m excavation squares were opened (Fig. 5). To link these renewed investigations with previous efforts, the four units excavated during the 2012-13 season were cleaned up and excavation continued. To determine the southernmost extent of the settlement, a small 2 × 3m trench was opened to the SE along the slope of the gully used as the primary access road to the top of the mound. The results of the SE trench effort clearly revealed that the Neolithic settlement at Gadachrili Gora was in fact larger than had previously been presumed.

The 2016 excavations consistently revealed a now familiar collection of crowded circular mud-brick structures ranging in size from 1.4-7m in diameter, frequently arranged in a figure-eight pattern with several associated small storage installations with diameters varying between 40-60cm. The agglomerative nature of the architecture and in-filling of features suggested sub-phases

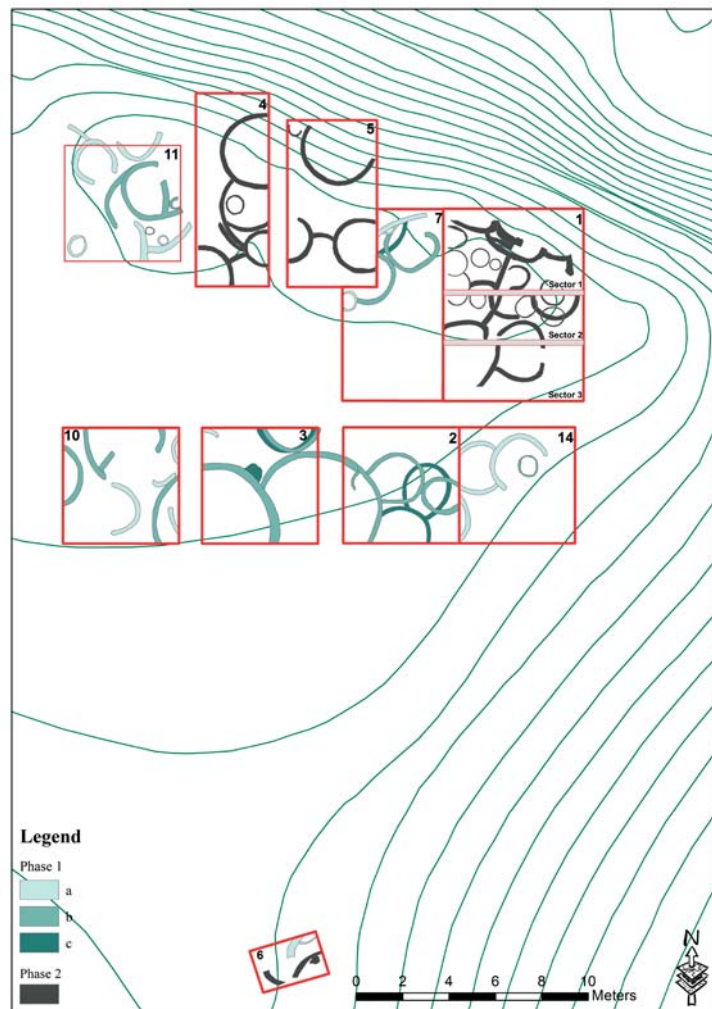


Fig. 5. Topographic map of Gadachrili Gora with excavation areas from all seasons of excavations arranged by major stratigraphic phases.



Fig. 6. a: Photograph of Phase 1 structure in Square 2 from south. Photograph by Davit Gagoshidze.  
b: View of Large Phase 1 structure in Square 3 from north. Photograph by Lisa Milosavljevic.

of activity within the two major strata of occupation. Of particular interest, the clay layer separating the two occupational phases of the site which were identified in the previous excavations (Hamon *et al.* 2015: 4), continued to be observed in Squares 2 and 6 but in an increasingly diminutive nature. The excavation of mudbricks from the upper phase was particularly difficult partially due to the proximity to the surface and the heavy bioturbation and plowing damage, and partially due to the greater concentration of calcium carbonate which tends to homogenize the deposits. The heavy presence of calcium carbonate is a result of its percolation through the sediments after heavy rains. This soil formation process is common in cycles of wetness and dryness and it plays a role in obscuring archaeological levels through its tendency to incorporate mudbrick architecture and archaeological surfaces into the soil matrix (for more details on this process, see Wilkinson and Tucker 1995).

### Phase 1 (Upper Horizon) excavations

In preparation for the season, heavy equipment was brought in to move back-dirt piles from previous seasons excavations, as well as to scrape off the initial 30cm of alluvial deposits over the upper horizon to speed up excavations of Phase 1 levels and achieve greater horizontal exposure. Phase 1 levels were excavated in Squares 2, 3, 7, 10 and 11. Each producing evidence of three sub-phases within the main Horizon. Trenches 2 and 3 were squares that had been initiated in 2012-13 seasons, with Square 2 representing a full 5 × 5m. Square 3 had initially begun as a 5 × 5, but after excavation of topsoil, was reduced to a 5 × 2.5m trench, and the unexcavated 5 × 2.5m section was the focus of the 2016 season. Squares 7, 10 and 11 were new units excavated from topsoil.

#### *Square 2*

A large curvilinear wall fragment with a diameter of 6m was identified upon immediate cleaning of post excavation debris, and represents the large wall first identified in the 2012-13 season and is preserved up to three brick courses in height. No interior surface was

identified, however a secondary raised mud feature was identified inside. Sealing against this wall was a new structure, defined by oval shaped walls with the diameter of 2.2m each in a figure-eight pattern. Mudbricks were more readily visible in these two walls measuring approximately 20 × 40cm. A phytolith layer was identified that could have been the remains of some vegetal flooring which preserved a collection of faunal remains and blackened flat-lying sherds, suggesting this may have been the living surface associated with the structure (Fig. 6a). Below this level, a medium compactness clay level, was identified, characterized by a high frequency of white calcium and black charcoal flecks, with several large bones flat lying sherds that may represent the earliest living surface to be associated with the structure. A burnt ashy layer 11 cm in thickness that sealed the walls, and should probably be associated with the upper sub-phase identified in the 2012-13 season.

### *Square 3*

The southern third of a small circular structure of approximately less than 2m, constructed of poorly preserved mudbricks was uncovered in the NE corner of the square. It is further preserved in the north baulk, and sits partially upon a wall of a lower sub-phase that shares a similar size and orientation, albeit slightly offset, and is clearly made of better preserved mudbricks. Its interior contained a high concentration of artefacts, particularly lithics.

To the south, another mudbrick wall fragment that forms the western extension of the large wall from Square 2, which forms part of a very large figure-eight structure with a wall 5m in diameter that continue into Square 10 (Fig. 7). A series of possible surfaces were identified by changes in colour and texture littered with lithics. Also found inside, five small circular small storage structure (diameter 40cm), three of which that had not been identified in the earlier excavations. Occupational debris found within the larger structure included a high concentration of bone, including three bone awls. Comparatively few lithics were identified in the eastern room, however, a green stone axe head was uncovered (Fig. 12a). The western room also contained a number of surfaces which contained a higher but varying concentration of occupational debris then the eastern room, including a 13 cm long obsidian blade (Serial# 2078).

In the NW corner of the trench a small pebble installation of undetermined nature was identified, which contained a high concentration of lithics – two whole bags were uncovered from this small locus, which was generally out of character for the surrounding loci. To the north of the structure was a semicircular ashy installation that probably represents a pyro-technical feature/hearth. It contained several large cobbles and numerous fragments of bone, many of which showed evidence of burning.

The structure formed by these walls (Fig. 6b) represents the largest structure uncovered at the site so far, and the fact that it is found in a less than prominent position on the southern portion of the settlement is interesting. It appears to have had two phases of construction, with the lower sub-phase slightly off center by 12 cm. The features contained by this structure might represent a series of living surfaces of differing characteristics.

*Square 10*

Preservation in Square 10 was significantly hampered due to the proximity of mudbrick architecture at the surface. Many of the wall edges were seriously deteriorated and fragmented through soil formation processes. Excavations uncovered a series of fragmentary circular wall arc, one of which represents the western fragment of the figure-eight structure identified in Squares 2 and 3.

The architecture found in Squares 2, 3, and 10 create a roughly linear collection of mudbrick structures built in the common figure-eight pattern, which would appear to be dominated by the twin set buildings in the southern two-thirds of the squares measuring over 6m in diameter. Most of the structures reveal multiple surfaces as well as several re-buildings suggesting a complicated phasing of occupation in this area of the site that must be determined with further excavation in this area and expansion to the south. The evidence of burning found in spots around the exterior of the structures more likely represents pyrotechnical features, most likely cooking hearths and the deposition of trash from the hearths in the immediate surroundings. Although a number of storage installations were uncovered, the concentration seems to be less than what has been identified in the squares previously excavated to the north, and especially less than what is uncovered in the lower phase of occupation. Whether this represents a functional aspect of the use of space, or a technological difference; such as the increased use of ceramics for storage, will be examined through further excavation.

*Square 7*

Square 7 was an oddly shaped trench approximately  $4.5 \times 8$ m in size, with the northern 2m of the trench only 1.5m wide. Its odd shape was dictated by its position between the previously excavated Square 5 (Seasons 2014-5), Square 1 (excavated 2006-7 and 2012-3 seasons), the north face of the mound and Trench 2 to the south. Topsoil had been removed in initial cleaning and as a result, the west side of the trench went almost directly into occupational levels, revealing many ceramic, bone and lithic fragments. In particular, three ceramic bases were uncovered and sampled for residue analysis. The vessel bases were concentrated in the eastern portion of the trench where ash deposits/lenses were beginning to emerge, alongside greater concentrations of bone material – including a complete head of a sheep that was uncovered just to the south of one of the ceramic bases. The east side of the trench revealed a high concentration of ash throughout the locus with a thickness of approximately 10cm, which covered the entire trench.

Excavations in the north part of the trench identified a series of circular structures representing three construction phases (Fig. 7a). A small semi-circular storage bin was preserved on the interior NE face of the northern most wall, which was essentially sterile with no anthropogenic material recovered. In contrast, another bin, found in the west-central portion of the trench contained significant burnt bones as well as seeds and phytoliths, the presence of which could be suggestive of food storage. In the southern portion of the trench the soil was characterized by a harder texture with no ash deposits, dominated by an exceptionally high concentration of faunal material and ceramic storage vessels, which furthers the suggestion that it may have been a food preparation area.





Fig. 7. a: View from south of Phase 1 “courtyard” and structures in Square 7 with Phase 2 architecture of Square 5 in background.

Photograph by Moska Rokay.

b: View of architecture in Square 11 from the west. Photograph by Cristina Savulov.

Square 7 represents an area of the settlement that demonstrates some of the most coherent and varied evidence for food production, from food storage in bins and ceramic vessels as well as possible animal butchering. The nature of these activities may change over the three sub-phases, as more vessels appear to be found in the upper sub-phase, which also seems to be characterized by a larger scale structure. The character of the second sub-phase changes slightly over time, with numerous, more diminutive structures, but food preparation appears to still be a focus. The nature of the data from the lowest sub-phase unfortunately precludes real characterization of the occupation at this time.

#### *Square 11*

Trench 11 was a 5 × 5m trench on the NW part of the mound. The eastern side of the square

has suffered significant erosion, principally the result of baulk collapse into Trench 6. A slightly ovoid structure, with a diameter of 2.6m with an interior division wall 1.69m in length, which abuts on the southern interior side but does not reach the northern interior face. Its fill consisted of significant ash and bone material. No surfaces were observed to associate with the structure. In the southeast corner of the trench an exterior pit that contained several ash lenses, and a high amount of bone, albeit without any evidence of burning was identified. An additional wall fragment, irregular in shape, does not reach or bond with any other walls.

A secondary phase of architecture, containing a structure with a diameter of almost 3.3m in diameter with two pits, was found in the SE section. Both pits produced little material even though they were quite deep and had not fully been excavated by the end of the season.



No living surface was identified, in the structure, however, limited excavation was completed, producing only a small amount of anthropogenic material. In the SW corner of the trench, a circular installation was identified which could be broadly contemporary to the structure. It was surrounded by evidence of burning and therefore could form part of an undefined cooking installation.

In the NW corner of the trench, two final mudbrick features were identified. A mostly intact circular structure approximately 1.3m in diameter was abutted by a secondary wall fragment which would form the now traditional figure-eight structure. They are stratigraphically isolated from the other excavated remains, but based on elevations, they are almost 90cm below the other structures and could therefore represent the lowest sub-phase of architecture in the square.

Trench 11 produced evidence of three sub-phases of occupation for the Upper Phase 1, consistent with that of other excavation units previously discussed. The nature of the occupation in this area of the site is difficult to characterize (Fig. 7b), due to limited exposure, and should be a target of further excavations.

#### *Square 14*

Square 14 was established to increase the horizontal exposure of Phase 2, taking advantage of the slope south of Square 1. As a result, the “square” was a non-standard triangular shape, 5 × 5 × 7m in size. The excavated remains, however, belong to the final sub-phase of Phase 1, and Phase 2 levels had not been reached by the end of the season.

Two wall fragments, theoretically of the same structure, that abut another wall, forming the now familiar figure-eight pattern structure. The interior fill layer contained lenses of ash along the western face of the structure that may have been fragments of a living surface, and a dark soil layer underneath the surface that may represent the construction surface. Excavating below the level of the construction surface, a burnt and ash-filled sloping layer was identified, that did not cover the entire trench. Another wall fragment was identified in the southwestern part of the square that ended in the baulk (Fig. 8a).

Square 14 has a number of problematic stratigraphic relationships that need to be addressed in subsequent seasons. Based on elevations and the stratigraphy in the probes in Square 2, Square 14 is close to the sterile clay level that separates the two main phases of occupation, and therefore an important target for future work.

#### *Square 6*

Excavations in Square 6 were established at the start of the season and lasted for only 5 days. The objective of this trench was to examine the southern extent of the site during the two primary occupation phases. As such it was decided to excavate a small trench 3 × 3m along a makeshift road, entering the site from the southeast through the riverbed. It was excavated in a step-trench manner resulting in two “steps”. Two separate phase of architecture were identified, separated by a flat blue-green sterile layer consistent with that found in other parts of the site which separate Phases 1 and 2 (Hamon *et al.* 2016: 157).

The limited exposure of Square 6 precludes characterizing the occupation in this area of the site. The importance of these results however show that the settlement extended further south than had previously been suspected, and it did so in both phases of occupation, albeit lacking most of the sub-phases. The identification of the sterile clay layer between phases is also of particular note, as it suggests whatever the depositional sequence responsible for this feature, it is site-wide, even to the extremities.

### Phase 2 (Lower Horizon) excavations

Phase 2 was excavated in Squares 1, and 6. Trench 1 was a square that had been initiated in 2006-7 seasons as a test trench, then expanded in the 2012-3 season (Fig. 8b). The square sits on the NE most spur of the site, directly overlooking the river. Its amorphous shape and size (8 × 3m) was divided into two sectors divided by a narrow 25cm baulk, with the northern edge of Sector I eroded by the river, and which has further eroded since the 2012-3 season removing some of the previously excavated features. A further 2 × 5.5m section (Sector 3) was excavated in the 2014-5 seasons by the team from the Georgian National Museum, separated from the previous excavations by a 50cm baulk. The excavations revealed a complex stratigraphy of 2-3 sub-phases, with clear delineation in the use of space (Hamon *et al.* 2015). The focus of the 2016 season was to clean the area of the previous excavations that had been partially subjected to the elements, assign new locus numbers to



Fig. 8. a: Phase 1 Architecture in Square 1 with burnt surface, from the north. Photograph by Lisa Milosavljevic.  
b: View of Phase 2 architecture in Square 1, originally excavated by Hamon. Photograph by Jane Dong.

the extant architecture, as well as expand to the south to provide wider exposures of this phase of occupation, with the aim of providing answers to some of the questions regarding the functional organization of space that emerged from the earlier investigations (*ibid.* 15).

Significant damage had occurred in the intervening years, with a number of the walls and installations having disappeared. Excavations in Square 1 were limited, focusing more on cleaning and preparing the southern section of the square to be linked up with the excavation in Square 14, which was undertaken contemporaneously by the same team.

### *Square 6*

Phase 2 occupation was uncovered in the lower step of the trench and was generally better preserved than the upper Phase 1. In total, two walls were uncovered in this level. The relationship between these two walls is not exactly clear, as their point of intersection happens to be at the eroded surface of the mound. Abutting one wall is a plastered surface interlaced with round river cobblestones and covered with a crushed limestone solution (Fig. 10a). An exterior surface associated with the building is presently poorly understood because it is only present in a narrow strip along the west baulk.

### SHULAVERIS GORA

Investigations at Shulaveris Gora (Fig. 9) were similarly hampered by rain. Excavations had two main goals:

1. to retrieve soil samples from the area of the 1960's Soviet excavation, to provide a baseline for residue analysis performed by McGovern in 2003 which provided a tentatively positive result for tartaric acid.
2. to explore the potential of future excavations at the site, in particular – as virgin soil was never reached in the Soviet excavations – to investigate and see if there were contemporaneous and earlier levels at Shulaveris than those at Gadachrili Gora.

Accordingly, two operations were initiated at the site to meet these objectives; Operation 1 (OP1) and Operation 2 (OP2).

### **Operation 1 (OP1)**

OP1 is located along the eastern side of the mound, corresponding to the NW corner of the old Soviet era excavations at the site<sup>1</sup>. The specific objective of OP1 was to carry out an extensive sampling strategy of soil deposits from earlier excavation sections. A second objective for OP1 was to explore potential occupation levels lying below those levels reached by the earlier Soviet efforts. Decades of exposure had resulted in the accumulation of several meters of back fill and erosion deposits. Much of this material was removed by a mechanized backhoe

<sup>1</sup> The old Soviet era trench is roughly 10 × 10m along the north and west sections and 4m along the south section. This shape was determined by the orientation of the road cut, which cuts the eastern portion of the mound at an orientation of southwest by northeast.



Fig. 9. Topographic map of Shulaveris Gora, with location of old Soviet excavation area (hashed line) and the locations of Operations 1 and 2 from the 2016 season.

leaving a rough but accessible section which we subsequently trimmed by hand (Fig. 10b). To maintain a straight section (north/south) at a proper orientation, we had to cut back into the section diagonally with the greatest cut-in depth corresponding to the NW corner.

The length of the section was limited to 3.5m along the north and 4.5m along the west sections; this choice was governed partially by the presence of a modern pit of undetermined date further south along the west section. Moreover, we positioned the probe ( $2 \times 2$  m) in the corresponding corner to our cleaned section. This position was determined by similar factors, in addition to the presence of numerous fox borrows along other locations, and our ability to trace architectural elements found within section trimming efforts.

### Excavations in Operation 1

Excavations reveal four phases of construction in OP1, and these phases seemed to have followed one another in quick succession (Fig. 11a). The earliest phase of the wall excavated in the test trench was associated with the bin, followed by a later phase of the same wall associated with a hearth. The two following phases were accessed at a more restricted scale under the newly cut baulk. The third phase was represented by a solitary bin that was built on top of a portion of the wall and extended towards the exterior, while the latest phase was associated with oven. It appears there may be continued phases to this sequence, however it is only present in the northern section and falls at least 0.5-0.75 m below the surface of the site. Unfortunately, most of the exposed western section is dominated by a large modern pit, which covers a substantial portion of it.





Fig. 10. a: View from south of mudbrick wall and plastered surface excavated in Square 6. Photograph by Lisa Milosavljevic.  
b: Photograph of re-excavated Soviet-era trench and section cleaning. View from east.

## Excavations in Operation 2 (OP2): The Step-trench

The step trench at the site of Shulaveri is a  $2 \times 8$  m trench oriented east/west along the western slope of the site (Fig. 11b). The objective of this operation was to reveal the depositional sequence at the site at a broader and more robust scale. The size of each step was governed by the extent of the preserved occupation along the slope. A total of five “steps” corresponding to five subsequent levels of occupation were excavated.

### *Step 1*

Step 1 was roughly  $2 \times 2$  m in dimension ( $2.04 \times 2.17$  m), and possibly encompasses two phases of occupation. The lower level represents the more substantial of the two phases with a sizable portion (70%) of a round structure terminating somewhere under the eastern and the northern baulks. The struc-

ture itself is rather small (1.35 m in diameter), and almost completely devoid of any artefactual remains on or above its surface. A smaller wall protrudes from the southern side of the structure. To the exterior of the structure the deposits were rich in artifacts and organic remains.

The occupation of this phase is capped by mudbrick collapse across of the majority of the step. This capping seems to be intentional as a means to level the surface for later occupation. The later occupation was simply represented with an artifact scatter concentrated in the southeastern portion of the trench, with the majority of finds consisting of faunal deposits, which may suggest that this part of the site during this particular phase could have been used for dumping, or associated with dumping activities of a nearby structure.





Fig. 11. a: Photograph of OP 1 Sounding, revealing fragmentary architecture from the “new” Neolithic levels.  
b: Photograph of OP 2 Step-trench from west.

### *Step 2*

The occupation phase from the second step of the trench was exposed immediately under the topsoil. A heavily damaged wall represents this phase with only its eastern portion preserved. Besides the heavy slope erosion that has damaged the much of the western portion of the structure, this step in general and the wall in particular, is riddled by animal borrows. In general, the wall seems to be part of a large oval/semi-circular structure with only about a third remaining. To the interior of the structure a few stone tools were recovered.

### *Step 3*

Step 3 proved to be the most complicated of the steps. The dimensions of this step are 2 × 1.2 m and contained deposits of two adjacent/overlapping buildings. This phase corresponds to a conflagration that may have been restricted to this portion of the site or could have been a site wide phenomenon. Though the nature of the destruction is unknown, we can conclude that the two buildings were purposefully leveled to construct the architecture of Step 2 (see above).

The two buildings in this phase consisted of walls arcs of similar trajectory (east to west), and are only partially preserved. The contemporaneity of the two walls cannot be disputed, as they seem to be preserved at the same height and terminate at similar depth. Moreover, the two walls were constructed using a similar technique not seen in any of the other phases before or after in either OP2 or OP1. The walls are made up of two rows of oblong mud-bricks, embedded in a thick, hard, light-coloured plaster like mortar<sup>2</sup>. A thick deposit of greyish clay, roughly 0.3-0.4 m thick, rich in ash lenses – possibly the remains of roof material – surrounds the two walls, which is then sealed by a clear layer of collapsed walls that cover the entire step. The linear pattern of the brick collapse may suggest that the walls were systematically pushed over to completely level the buildings.

<sup>2</sup> The colour and hardness of this mortar is likely to have resulted from the conflagration affecting the phase.

Morphologically, this level is followed by a sharp dip in the layers leading down to Step 4 and an increase in the depth of the architecture, perhaps a result of increased erosion. The hardness and compactness of the layers in Step 3 (due to the burning) coupled with the bulldozing of the edge of the mound during the Soviet era, may have led to a differential erosive action along the new slope.

#### *Step 4*

Architectural preservation in Step 4 is rather poor and restricted to an area along the eastern baulk. Moreover, the step was subject to extensive animal burrowing, which further obscured the features. The dimensions of this step were  $2 \times 1.3$  m, with the architectural remains lying under a series of sloping layers. The architectural remains consisted of what seems to be the exterior face of a structure barely protruding from the southern portion of the eastern section, and a bin or oven, which may have been connected to it but is now damaged by an animal burrow. The oven/bin contained a large amount of charred organic material, primarily consisted of charred barley seeds.

#### *Step 5*

The final step excavated in 2016, the thickness of the semi-sterile deposits reached around 0.8 m in depth. This deposit contained very few artifacts accompanied by the heavy presence of iron from 20<sup>th</sup> century machinery. On the final day of the excavations, the team was able to reach a somewhat more secure context with a few mudbrick remains amongst other Neolithic artifacts promising continued occupation levels beneath Step 5. The depth of these deposits in Step 5 are near the level of the surrounding plain.



Fig. 12. Examples of assorted lithic tools from excavations at Gadachrili Gora.

a: Green stone axe head, from Sq. 3 Locus 14.

Object #: GG16\_041.

b: Obsidian blade, from Sq. 10, Locus 3.

Object #: GG16\_053.

c: Obsidian blade, from Sq. 3, Locus 29.

Object #: GG16\_040.

d: Obsidian blade, from Square 10,

Locus 8. Object #: GG16\_054.

## Discussion

In both OP1 and OP2 the site produced a coherent sequence of the late Neolithic Shulaveri-Shomu culture characterized by circular and semi-circular structures, obsidian stone artifacts, intricately worked bone tools, and the initial appearance of ceramic vessels similar in form and fabric to that found at Gadachrili Gora. Regionally, this material assemblage does not appear to change dramatically from phase to phase, or indeed from site to site.

The 4 occupation phases in OP1 along with the five (perhaps six) occupation phases of OP2 are presently difficult to tie together because of the similarity in the material remains, and the lack of material to tie directly into the old excavations. Nevertheless, what can be said about the site is that the occupation is mainly continuous without much interruption through much of the sixth millennium, as is suggested by the radiocarbon data. Furthermore, the new level identified in OP 1 appears to be contemporaneous to the lower Phase 2 levels at Gadachrili Gora, and as virgin soil has still not been achieved, further investigations at Shulaveris Gora have the potential to push back the Neolithic occupation in the region further.



Fig. 13. Examples of assorted bone tools from excavations at Gadachrili Gora.

- a: Bone scraper, from Sq. 1, Locus 2. Object #: GG16\_059.
- b: Bone awl, from Sq. 1, Locus 1. Object #: GG16\_062.
- c: Bone spoon, from Sq. 2, Locus 17. Object #: GG16\_083.
- d: Bone button or whorl, from Sq. 3, Locus 42. Object #: GG16\_072.

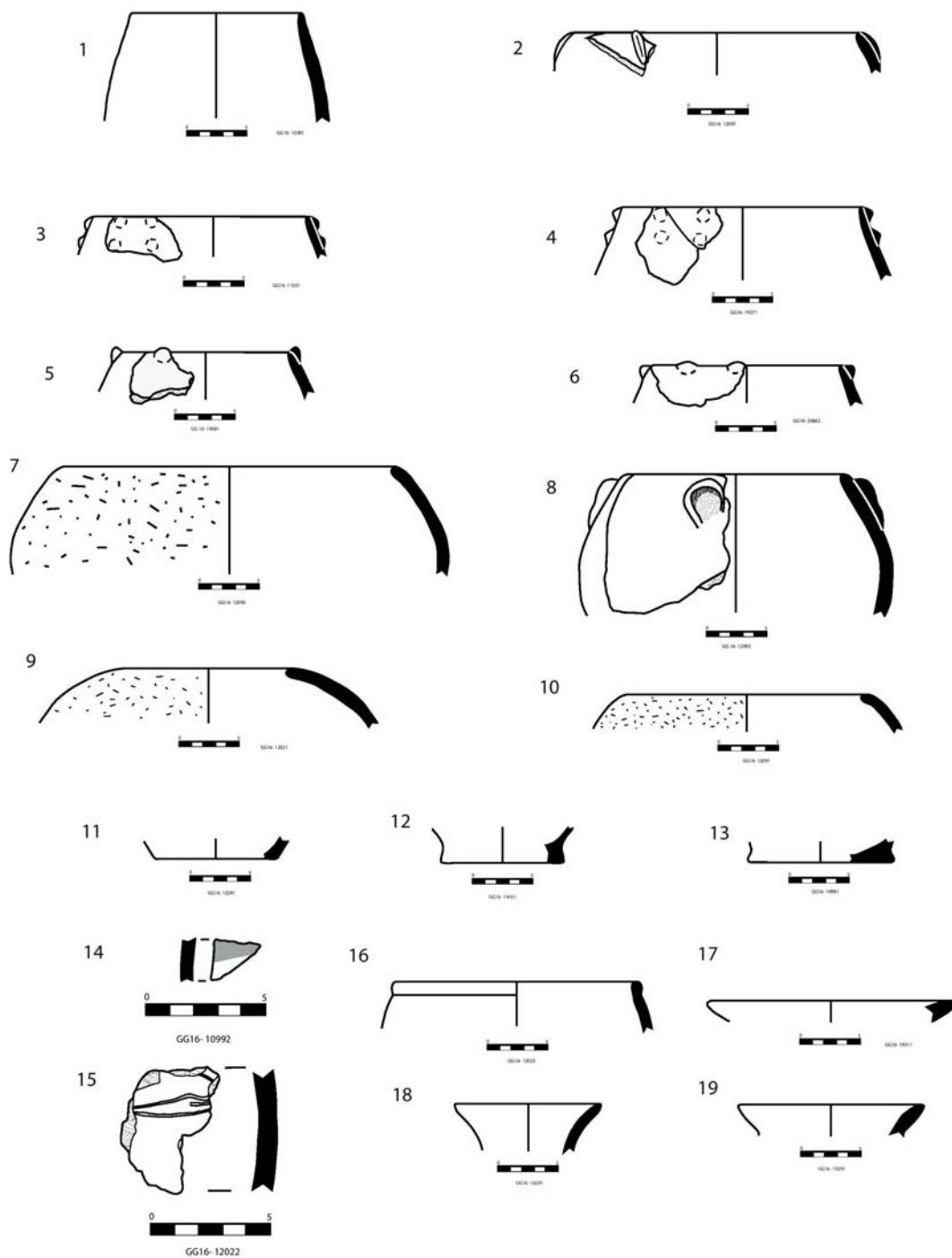


Fig. 14. Neolithic SSC pottery from Gadachrili Gora.

## THE CERAMIC ASSEMBLAGE

*(Khaled Abu Janyab and Cristina Savulov)***Ceramics from Gadachrili Gora**

The ceramic assemblage recovered from the 2016 excavation season at Gadachrili Gora was represented by a small corpus of diagnostic sherds (n: 42). This assemblage comes entirely from Horizon 1, the later horizon at the site (Hamon *et al.* 2015). As has been noted by previous excavators at the site (Hamon *et al.* 2015: 155), the small amount of ceramic remnants, compared to contemporary sites, remains puzzling. This paucity could be attributed to several factors. First, social factors such as the cleanup and collection of ceramic materials before the abandonment of the site may play a role. Second, it could be attributed to preservation: the low firing of ceramic materials during the Neolithic combined with moisture in the soil might well have contributed to the fragmentation and decay of pots. However small, the collection of ceramic remains recovered from the site is presented here.

The 2016 season recovered a total of 42 diagnostic sherds. This assemblage includes rims, bases, decorated body sherds, and body sherds with lugs and/or other applique. The continuous crumbling and fragmentation of non-diagnostic body sherds renders a total count of the assemblage exaggerated and makes it difficult to estimate the proportion of diagnostics to non-diagnostics.

**Fabric analysis**

The macroscopic analysis of the Gadachrili Gora assemblage was conducted using a low-powered field microscope (20 X). It was possible to tentatively identify several mineral inclusions within the clay fabric of the sherds. Looking at the combinations of mineral inclusion type, size, and frequency, two main fabric groups have been identified with an additional fabric group that could be intrusive.

*Fabric Group 1 (n: 35)*

Fabric Group 1 is by far the most dominant fabric used at the site. The primary characteristic of this fabric group is the heavy presence of what appears to be basalt fragments in coarse sand fraction. In total, this group could be further divided into four groups: 1a-d. Fabric 1a is by far the most numerous (n: 19; 45.2% of diagnostic sherds). This fabric is composed of, aside from the frequent basalt, limestone and oxides. Fabric 1b contains what appear to be calcite or quartzite, and oxides instead of limestone; it is the second most common fabric sub-group (n: 8; 19%). Fabric 1c represents a mix of both 1a and 1b with calcite/quartzite and limestone in the same sample (n: 3; 7.1%). Finally, fabric 1d is mainly basalt tempers with what appear to be oxides (n: 5; 11.9%).



*Fabric Group 2 (n: 6)*

The primary characteristic of this group is the heavy addition of vegetal temper to the clay matrix. This group could be divided into two sub-groups: 2a and 2b. Fabric 2a (n: 3; 7.1%) is very similar in composition to the Group 1 collection; the main difference being the addition of finely chopped vegetal inclusions. The inclusions may likely be chaff. Fabric 2b (n: 3; 7.1%) represents a departure from the clay procurement and processing traditions observed in the previous sub-groups. Basalt, limestone and quartz/calcite are completely absent from the matrix. Instead, the fabric is composed of clay with finer mineral inclusions and a heavy presence of vegetal material (Fig. 14). The minerals observed in the matrix of this sub-fabric are all fine sand particle size, and what can be identified seem to be mainly micas. The negative impressions of the vegetal temper appear very clearly on the surface, giving them the appearance of later examples of chaff-faced wares, known from the Chalcolithic period around the regions of the Caucasus, Southeastern Anatolia and Northern Mesopotamia. Chaff-faced wares (n: 3) all occur in the upper levels of Horizon 1 which may indicate that they are chronologically a later phenomenon.

*Fabric Group 3 (n: 1)*

This fabric is a very finely-levigated buff clay fabric with no visible inclusions. Since this group is composed of only one sherd, we are reluctant to include it here. This sherd is the only painted body sherd recovered thus far at the site. It is possibly of later date to the assemblage, and an intrusion. However, painted sherds made of fine homogenous clay have been reported from other contemporary sites in the region in low frequency, such as at the site of Aknashen in Armenia (Badalyan *et al.* 2010: 193-194). The sherd might alternatively be an import that made its way to Gadachrili Gora. This hypothesis is plausible especially in the absence of any indicators of occupation beyond the Neolithic.

## Morphology

The vessel forms attested at Gadachrili Gora are limited in number and mainly dominated by restricted forms such as hole-mouth pots (HMP) and incurved cylindrical vessels. Unfortunately, as no complete profiles were recovered from the site during the 2016 season, full vessel forms remain elusive. Besides HMPs and cylindrical vessels which form the vast majority of the assemblage (n: 33; 78.5% of diagnostics), there are three bases (Fig. 14: 11-13), two flaring rim jars (Fig. 14: 18-19), a beaded inverted bowl (Fig. 14: 16), a shallow bowl (Fig. 14: 17), and two decorated body sherds (Fig. 14: 14-15).

Globular HMPs (Fig. 14: 2, 8-10) are by far the predominant form (n: 20) and most are made from Fabric Group 1 (n: 15), with the remaining three heavily chaff-tempered (fabric 2b). The HMPs are globular in shape with a rim that is usually thinned. However, a few examples of this vessel have thickened rims (n: 3). Restricted incurved cylindrical vessels are also very common (n: 13) and tend to be more vertical with a less incurving body than the HMPs (Fig. 14: 1, 3-6). The vast majority of these vessels are made of Fabric 1 (namely 1a; n: 8) with the exception of one example made of Fabric 2a.

The three bases found at the site are flat; two are outwardly flaring (Fig. 14: 12-13) and one which is straight (Fig. 14: 11). It is hard to associate these bases with any particular form. However, the flaring examples resemble bases found that can be associated with the deep cylindrical incurved vessels at Aknashen (Badalyan *et al.* 2010: fig 9.3: 10, 13) and Mentesh Tepe (Lyonnet *et al.* 2015: fig 9: 7). The bases, the flaring rim jars, the beaded bowl, and one of the decorated sherds are all made of Fabric 1 clays; the exceptions are the painted body sherd mentioned above, and a shallow bowl or plate that is the only none-restricted form with heavy chaff temper.

## Decoration

Three types of decoration are observed on ceramic vessels from Gadachrili Gora: painted, incised, and applique. In total, decorated sherds amount to 66.6% of the assemblage (n: 28). As mentioned above, painted wares are rare and occur on only one example from the assemblage (this example had a red painted band (Fig. 14: 14)). We also have one example of an incised sherd (Fig. 14: 15). The sherd contains a series of simple incised lines without a clear pattern. The majority of the decoration, however, is in the form of applique knobs (Fig. 14: 3-6), vertical almond shaped lugs (Fig. 14: 2), and applied semi-circles (Fig. 14: 8). Of the 42 diagnostic sherds, 26 have applique decoration (61.9% of all diagnostics), and 23 of these have knob appliques (54.7% of all diagnostic sherds). Applique decoration is, thus far, completely restricted to HMPs or cylindrical vessels. Surprisingly, applique decoration is almost exclusively restricted to vessels made of Fabric 1, with the exception of one vessel that has a crescent lug (the sole example) made of Fabric 2a. This sole vessel also happens to be the only example of a cylindrical vessel made of Fabric 2a.

## Construction

Vessel construction is dominated by coiling, as evident by the bumpy interior surface at regular intervals (2-3 cm). In total, 83% (n: 35) of the vessels within the assemblage seemed to have been formed using this technique. Additionally, we have a few fragments (n: 3) that seem to have been constructed using the slab construction technique or much larger coils. Otherwise the remaining vessels were perhaps pinched and formed by hand (namely the two bowls) or flattened against a hard surface, such as the bases (n: 3), with coils or slabs attached to them for the full construction of the vessel.

The surface treatment of the vessels is very minimal. Contrary to finds at contemporary sites we do not have a great deal of surface modification taking place on the vessels. Most vessels recovered were slightly smoothed with barely any intensive effort occurring. The only exceptions to this were two bases (Fig. 14: 11-12) that had traces of burnishing on their exterior surfaces, and the painted sherd that was smoothed.

The majority of vessels seem to have been fired at low temperatures in a reducing atmosphere (n: 34; 80.9%). Most HMP and cylindrical pots were fired in a reducing atmosphere (n: 19; 45% of diagnostics). Moreover, the majority were either completely black or dark gray, indicative of choking during the firing process. Vessels in the assemblage had differential firing

and mottling across their surface, which shows irregularity in the firing process in terms of oxygen flow and is thus indicative of open pit firing. Chaff-faced wares (fabric group 2) were mainly yellow, brown, or reddish in colour which distinctly separates them from the predominantly darker mineral tempered vessels, and may suggest that the potters involved in the production of this group followed a different procedure than the one associated with other fabric groups.

### **Ceramics from Shulaveris Gora**

It is difficult to assess the assemblage from the recent excavations at Shulaveris Gora because there were only four diagnostic sherds recovered from the site. Since we were excavating a deep sounding and a step trench on either side of the site, the four diagnostic sherds recovered come from various phases of the settlement's history. We will nevertheless look at these sherds in general terms until future excavations produce a larger corpus. All four sherds have parallel fabrics with those of Gadachrili Gora, with two composed of fabric 1a and two of fabric 1b. The forms recovered at the site are three cylindrical vessels and one base. The three cylindrical vessels have a number of knobs. Firing and colour scheme also follows the assemblage at Gadachrili with three black or dark grey samples and a brown one with a reduced core. As such, the main difference is the absence of vegetal-tempered and chaff-faced wares (even from the body sherds observed). We cannot be certain if this absence has to do with chronology or simple choices made at each site until we have secure dates for comparisons between the two sites.

### **Regional parallels**

Within the region, Aruchlo provides the closest parallels in terms of ceramic assemblages (Hansen *et al.* 2007, 2013; Kushnareva 1997: fig. 9). As noted by the excavators (Hansen *et al.* 2007: 18, 2013: 393), the site produced a “relatively limited repertory of forms, with steep-walled pots being very characteristic”. Moreover, both clay selection and decoration point to similar practices attested at Shulaveris Gora and Gadachrili Gora. The two main types of fabrics found at Gadachrili are present at Aruchlo: basalt or a basalt-rich source commonly used, in addition to the presence of vegetal-tempered or straw-tempered vessels. Applique decoration is reported to be common at Aruchlo: “one-fourth of sherds are decorated with knobs”. Semi-circles – or what we refer to here as crescents – are also present at Aruchlo (Hansen *et al.* 2013: 393). Differences between the assemblages could be seen in the absence of certain motifs at Gadachrili such as applique circles and serpent. Also, absent from the repertoire at Gadachrili are well-polished ceramic vessels. Contemporary sites in the region, such as Imiris Gora and Khramis-Didi Gora, seem to exhibit parallels to the Gadachrili Gora assemblage (Kushnareva 1997: 30-33), although these have not been published in detail.

In neighboring regions, the sites of Mentesh Tepe (Azerbaijan) and Aknashen (Armenia), show some similarity with the Kvemo-Kartli assemblages. At Mentesh Tepe, despite similarities in terms of architecture, the ceramic assemblages exhibit certain sharp distinctions. Chaff-tempered wares dominate the assemblage at Mentesh, with red-slipped and polished wares being common. Vessel forming techniques are also very different with wide band and slab construction dominating the assemblage rather than coil building (Lyonnet *et al.* 2015:

11). Moreover, the most distinct feature of the Kvemo-Kartli assemblage – the applique decoration – is almost completely absent at Mentesh (*ibid.*: 10). Finally, bitumen decorated wares, reported from Mentesh, do not seem to find their way to Gadachrili.

Surprisingly, the Gadachrili assemblage finds closer parallels with a site across the southern ranges of the Caucasus, in the Ararat plain. At Aknashen the excavators claim that their assemblage was not common in the Ararat plain but has more parallels with the Shulaveri-Shomu culture in Kura river valley (Badalyan *et al.* 2010: 193). Elements such as coil construction, the presence of mineral- and chaff-tempered ware groups, in addition to the presence of HMPs and cylindrical vessels with applique decoration such as knobs, almond shaped lugs, horizontal lugs (Badalyan *et al.* 2010: fig 9.3), are found across both regions. The main difference is the presence of pure clean clay painted wares, supposedly related to Samarra wares at Aknashen (nine sherds).

## CONCLUSIONS

The 2016 season at Gadachrili and Shulaveris Gora was limited in its exposures, and many of the artefact groups are still under analysis. Wider exposures at both sites more is necessary to draw more meaningful conclusions. What can be observed is that the cultural assemblages identified at both sites is consistent with all the same artefact types that were recovered from other SSC sites in south Caucasia. The levels are securely dated to the first half of the 6<sup>th</sup> millennium, and the assembled radiocarbon data suggest that the Kvemo-Kartli cluster of SSC settlements appear to cumulatively cover the entire occupational period of the SSC, and Shulaveris alone, might hold a continuous sequence.

The overall character of architecture at the two sites, dominated by circular buildings with a predominance for combining two round structures into a figure-eight pattern fits within the patterns observed at other SSC settlements. Said with the *caveat* that we have insufficient Phase 2 architecture to properly compare the two phases, in broad strokes, Hamon's observation that "a real difference in spatial organisation is evident between the two horizons" remains valid (Hamon *et al.* 2015:14). This is best observed in Square 7, which appears to have a wide open space for food processing/preparation. Phase 1 architecture does appear to be less dense than what is observed in Phase 2, and produces comparatively fewer storage bins. However, larger structures (5+m in diameter) like those found in Phase 1 are not present in Phase 2. How to interpret these larger structures is also unclear: are they the result of changes to family size or organization, increased wealth, or social stratification?

The ceramic assemblages of Gadachrili, and to an extent of Shulaveris Gora, show a different distribution from other aspects of material assemblage. This is suggestive that a view of culture as a multi-leveled networked phenomenon with various socio-economic practices circulating through different networks and communities of practice should be a better approach to examining the SSC. Despite the wide distribution of house forms and other elements of the assemblage across the Kura valley, ceramic assemblages, or rather behavior associated with ceramic craft learning, seemed to have had a different circulation pattern. This phenomenon can best be seen in the intra-regional isolation of the Aknashen assemblage (Badalyan *et*

*al.* 2010: 193), and in the variation between the Kvemo-Kartli cluster and sites further downstream in Azerbaijan (i.e. Mentesh Tepe). This condition could suggest that populations at Gadachrili (and indeed Shulaveri and Aruchlo) may have focused their attention on highland resources such as herding, viticulture, and obsidian procurement, rather than on greater interactions across the Kura plain.

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## RECENT DISCOVERIES (2015-2016) AT ÇADIR HÖYÜK ON THE NORTH CENTRAL PLATEAU

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### **Abstract**

*The Çadır Höyük mound is located in the Yozgat Province, approximately 16 km from the modern town of Sorgun. The site has been under excavation by members of the present team since 1994, following an intensive surface survey in 1993. The earliest documented occupation of the mound dates to 5200 cal. BC; the site was abandoned at some point in the 12<sup>th</sup>-13<sup>th</sup> centuries CE. Since 2012 the Çadır team has investigated virtually every period represented on the site, from the Late Chalcolithic through the Byzantine periods. The 2015 and 2016 seasons of work, the focus of the present article, continued this trend of complete coverage, with particular focus on the prehistoric (Late Chalcolithic) and Byzantine occupation. The second and first millennia BCE were also investigated, and an overview of some of these results are offered here. The last two seasons have been particularly helpful in allowing us to carefully phase the Late Chalcolithic town, which has manifested into an “upper” and “lower” component. The settlement phases demonstrate a changing strategy of town planning over the course of the fourth millennium. These two seasons have also yielded substantial results in our Byzantine occupation, allowing a better understanding of the architecture associated with the defensive wall that rings the mound summit, and insight into the occupation of the site in the centuries spanning the early second millennium CE.*

### INTRODUCTION

The 2015 and 2016 seasons at Çadır Höyük,<sup>1</sup> in the Yozgat Province (Fig. 1), were the largest and most robust carried out thus far. Each season featured over 35 researchers and up

<sup>1</sup> Sharon Steadman (SUNY Cortland) and Gregory McMahon (University of New Hampshire) serve as co-directors of the project; Emre Şerifoğlu (Bitlis Eren University), Marica Cassis (Memorial University, Newfoundland) and Benjamin Arbuckle (University of North Carolina) serve as Assistant Directors; Anthony Lauricella (University of Chicago), Stephanie Selover (University of Washington), Laurel Hackley (Brown University), Burcu Yıldırım (METU), and Emrah Dinç (Bilkent University) are valued area supervisors; Sarah Adcock (University of Chicago) and Katie Tardio (University of North Carolina) serve as project archaeozoologists. We thank the Turkish Kültür Varlıkları ve Müzeler Genel Müdürlüğü, and Mahmut Aygat and Adem Bedir, our representatives in the 2015 and 2016 seasons, for their invaluable aid during these seasons of work. We also thank Hasan Şenyurt, Director of the Yozgat Museum, for his constant support of our project. In addition to the authors, our excellent core team includes Jennifer Ross (Hood College) Associate Director; Jeffrey Geyer (Hood College) lithics; Madelynn von Baeyer (University of Connecticut) archaeoethnobotany; Yağmur Heffron, West Slope operations; and Soran Avcil, Conservation. In the 2015-2016 seasons additional Çadır core team members included Johanna Vroom (Leiden University), Byzantine ceramics, and Stefano Spagni, metals analysis. Other valuable team members during

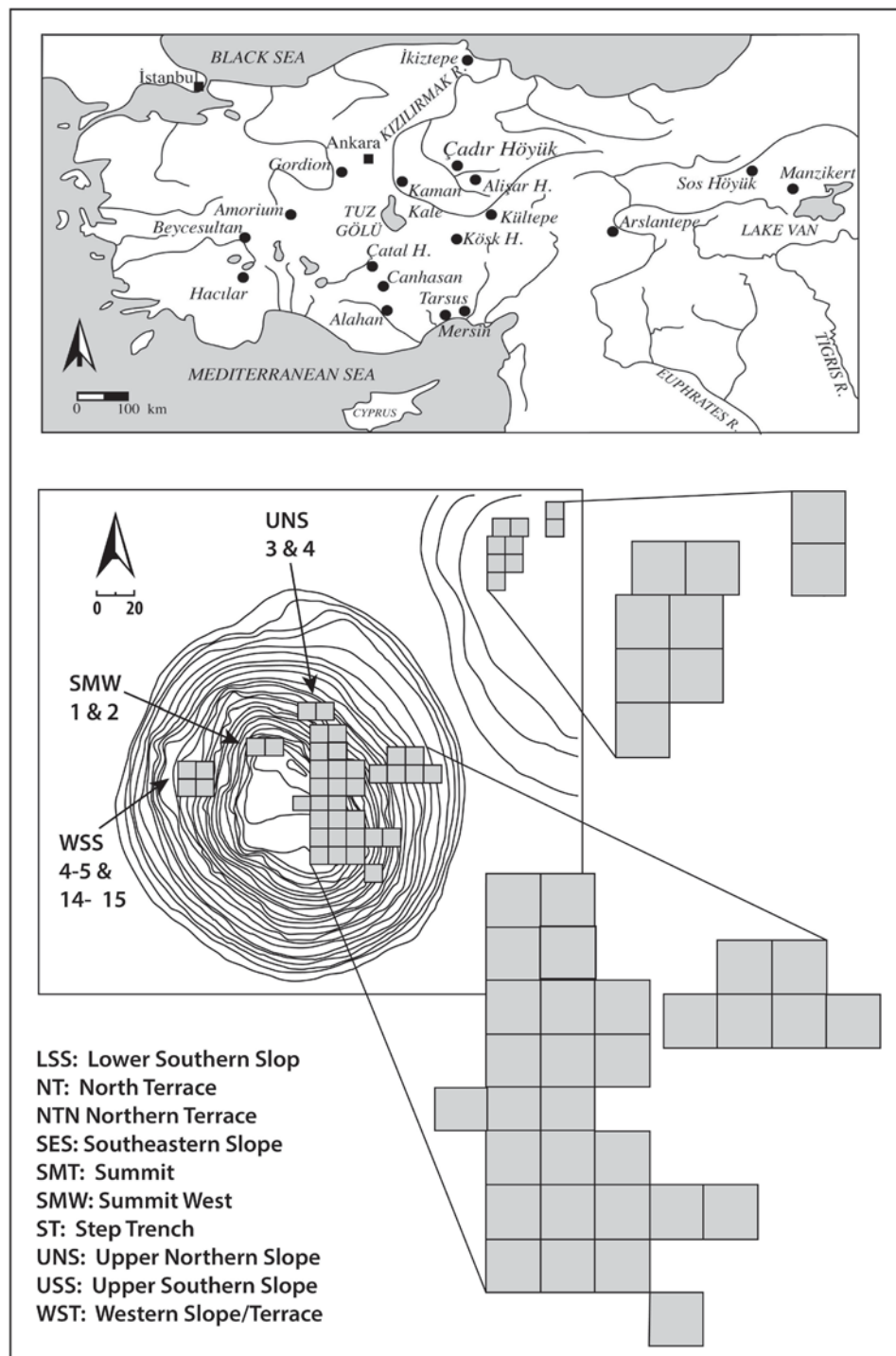


Fig. 1. Top: map of Turkey showing sites mentioned in the text. Bottom: topographic map of Çadır Höyük showing locations of open trenches.

to 38 workmen on site, with excavations proceeding in at least fifteen 10 × 10 m trenches each season. In both seasons we investigated all periods represented at the site, from the Late Chalcolithic to the Byzantine, including the second millennium Hittite periods, the Iron Age, and the late first millennium Hellenistic period. It is our largest operations, the Late Chalcolithic and the Byzantine periods, that will form the majority of the discussion below, with some overview of the second millennium also included. Reports on our Iron Age and Hellenistic periods can be found in other recent reports (Serifoğlu *et al.* 2016; Steadman and McMahon 2017).

The Çadır mound extends approximately 5 ha across a natural rise with another 5 ha of occupation on the north terrace. Foot reconnaissance in the areas north and northeast of the mound suggests that additional occupation, primarily in the Byzantine era, may have extended as far as another 10 ha beyond the mound. Trench areas are named for their geographical position on the mound (Fig. 1). In the 2015 and 2016 seasons we excavated trenches on the North Terrace, on the eastern, southern, and western slopes, and on the mound summit. Detailed summaries of previous years of work at Çadır can be found in earlier issues of this publication (Steadman *et al.* 2013, 2015) as well as other publications noted in the text below.

#### THE “LOWER TOWN” LATE CHALCOLITHIC OCCUPATION

At present there are ten trenches featuring Late Chalcolithic (fourth millennium BCE) occupation, all located on the southern slope of the mound. Five of these trenches are open to their full 10 × 10 m extent, and the other five range in size from 3 × 10 to 6 × 10 m. Excavations in seven of these trenches were carried out over the 2015-2016 seasons. Tentative phasing can be found in Table 1. We have developed new terminology to describe our Late Chalcolithic occupation which includes the “Lower” and “Upper” towns (town being a grand word to refer to what was a medium-sized village). Until the 2015 season, the two trenches further up the slope, USS 9-10 (see below), had demonstrated only Early Bronze occupation. There is now Late Chalcolithic occupation in this “Upper Town” area which rests roughly 1.5 m above the “Lower Town” area described in the following section.

#### The Agglutinated Phase (Trenches SES 1-2 and LSS 5)

The earliest building phase currently exposed at Çadır Höyük is a Late Chalcolithic complex spanning trenches SES 1 and LSS 5 (Fig. 2). Because the building is composed of small rectangular attached rooms arranged around a series of larger courtyards, the complex

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this period included: Jamie Allen, Nevra Arslan, Qizhen Xie, Joshua Cannon, Scott Coleman, Maira De sa Kaye, Jordan Dills, Alicia Hartley, George Heath-Whyte, Anna Gorall, Skye Jones, Veronica Kalas, Damjan Krsmanovic, Katarzyna Kunciewicz, Rolland Long, Serena Love, Orlene McIlfatrick, Erdoğan Ödük, Gonca Özger, Stephanie Offutt, Paige Paulsen, Susan Penacho, Gabrielle Peyton, Tamara Schlossenberg, Christoph Schmidhuber, Mark Sickie, Kennedy Smith, Kristen Squires, Michele Thomas, Joseph Wolter, Natalie Yeagley, and Chi Zhang. We would also like to thank the following institutions for financial and administrative support of the Çadır Höyük excavations: the National Science Foundation (BCS #1311511), the Social Sciences and Humanities Research Council of Canada (Insight Grant 435-2014-0944), Hood College, Memorial University of Newfoundland, SUNY Cortland, and the University of New Hampshire.



Period	Trenches SES 1-2 & LSS 5	Trenches LSS 3-4	Trenches USS 9-10	Radiocarbon Date
5 <sup>th</sup> millennium BCE	Deep Sounding (LSS 5)			Beta #146710 4520-4480 BC (Cal BP 6670-6430)
ca. 3700-3500 BCE	Agglutinated Subphase 1			Beta #134069 3705-3620 BC (Cal BP 5655-5570)
	Agglutinated Subphase 2			
		Pre-Omphalos Building Phase		
ca. 3500-3300 BCE	Burnt House Subphase 1	Omphalos Building Phase		Beta #159391 3650-3340 BC (Cal BP 5600-5290)  Beta #134070 3485-3475 BC (Cal BP 5435-5423)
ca. 3300- 3200/3100 BCE	Burnt House Subphase 2		Subphase 1	Beta #391309 3335-3210 (Cal BP 5285-4970)
ca. 3150-3100	Apsidal Phase		Subphase 2	Beta #363834 3170-3160 (Cal BP 5120-5110)
ca. 3100-3000			Subphase 3	Beta #391304 3140-3020 (Cal BP 5090-4970)

Table 1. Prehistoric Phases and Subphases discussed in text.

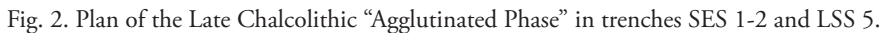
is referred to as the “Agglutinated Phase.” This phase is architecturally distinct from the later Chalcolithic construction at Çadır, but shows similarities to roughly contemporary sites across the plateau (e.g., Canhasan 1 [French 1998], Hacilar II [Mellaart 1970]).

Probably due to both changes in use as well as damage from fire, the Agglutinated structure was remodeled several times. In some cases, due to poor preservation and the interference of other, later structures, it is difficult to be certain which modifications belong to which remodel. In many cases, however, the sequence can be reconstructed with confidence. The Agglutinated structure spans several rebuildings featuring varying types of activity, ranging from domestic to industrial (likely cottage industry), and undergoes a very gradual abandonment. At present we can confidently articulate two building subphases, but as noted above, there were likely minute changes even within these, and further excavation in the coming seasons may elucidate additional building inter-phases.

### *Agglutinated Subphase 1*

The earliest building subphase currently exposed establishes a basic floor plan that persists until the destruction/abandonment of the building and influences later structures. The structure is at the edge of the mound and therefore of the settlement, and erosion on the slope of the mound has destroyed the southern edge of the complex in SES 1.<sup>2</sup> Despite this, however,

<sup>2</sup> “F” refers to “feature” and “L” to Locus in our excavation recording system.



The agglutinated structure is arranged to the south and east of a large square courtyard located at the western edge of the complex (labeled “Exterior Courtyard” in Fig. 2). The northern wall of this courtyard (F84 and 87, LSS 5), which incorporates large stones, is more than a meter thick and appears to be an external wall. This wall, which runs east under the north baulk and further west into the neighboring LSS 4 trench, was reused or rebuilt in later phases (in particular the Burnt House and Courtyard phase; Steadman *et al.* 2007, 2008), also likely as an external wall. The other courtyard walls (F86, 102) consist of mudbrick, very well preserved, about 50 cm wide; they could plausibly have borne the weight of a second story. The presence of a second level is also suggested by the fact that the small outer rooms are at a substantially lower level (approx. 50-70 cm) than the courtyards with which they share walls. This arrangement would have allowed the second story to stand fairly low relative to the courtyard level, and would have permitted traffic both above and below ground level, passing through the courtyards (Fig. 3). The burned collapse in LSS 5 (F81; see Fig. 4), discussed below in the Subphase 2 section, indicates that builders in this Agglutinated Phase used large, squared timbers laid horizontally. As yet, no doorways have been identified in any walls except the westernmost, external wall described below. Entrances to the lower rooms may have employed a combination of raised thresholds and ladders down from the courtyard level. Although these

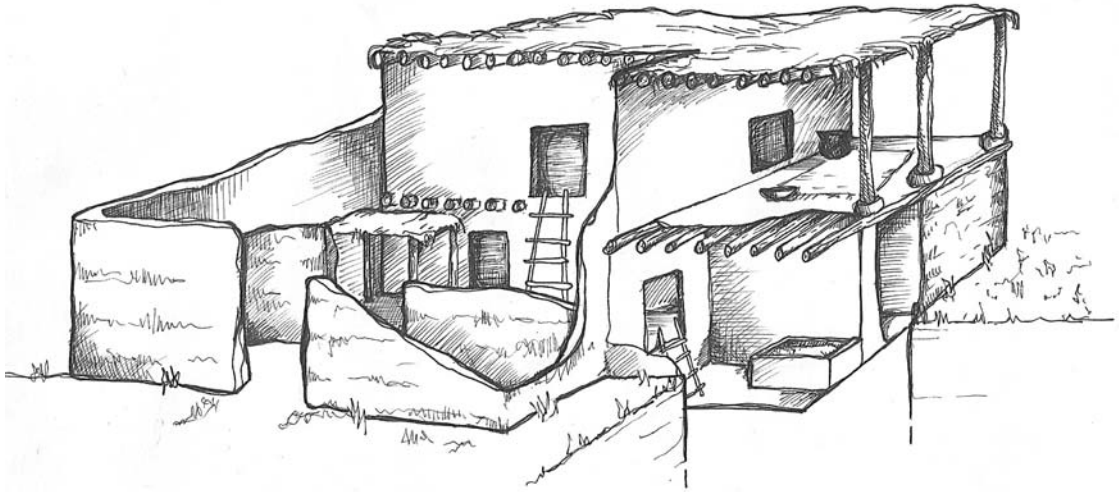


Fig. 3. Artistic rendering of what the Agglutinated architecture may have looked like (Laurel D. Hackley).

walls are maintained throughout the life of the Agglutinated structure, they are interrupted and overbuilt on the south by the stone enclosure wall LSS 5, F94, indicating a stratigraphic end-date for the use of the complex.

To the west of this courtyard is a narrow corridor or forecourt (L113 in LSS 5) running the length of the structure (ca.  $2 \times 6$  m). The original function of this space is not entirely understood as it has not been excavated to its lowest levels; however, in later iterations, it serves as an intermediary zone between the Agglutinated structure and a north-south street to the west. Very little pottery has been recovered from this forecourt area. Evidence from later phases suggests that the entrance to the complex (F106, LSS 5) was located in the wall between this forecourt/anteroom and the western street, and no other entrance has been identified for any period.

The Exterior Courtyard itself (ca.  $4.20 \times 6$  m), which has also not been excavated to its lowest levels, has nevertheless provided evidence for at least two, if not more, episodes of destructive fires, probably starting from the large hearth or oven, described more fully in the Subphase 2 section below. Fires emanating from this feature may have been the impetus for at least some of the remodeling of the Agglutinated complex.

The large courtyard abuts a smaller space on its southeastern corner (labeled “Court-yard” on Fig. 2), which appears to have been an inner courtyard (ca.  $2 \times 3$  m) allowing entrance to the other rooms of the structure. Three small (ca.  $2 \times 3$  m) rooms (Rooms 1, 2, and 3) run along the south side of the complex, and are well preserved despite being eroded away on the south, at the edge of the mound. Room 4, near the northern extent of trench SES 1, is largely overbuilt by a later stone wall (SES 1, F168, F177) that has been left in place in order to preserve the stability of the northern baulk. Room 4, therefore, has not been fully excavated. The eastern side of the complex has been disturbed by later construction (SES 1, F123 and F109), which interrupts rooms 5 and 6, spaces that belong to the Agglutinated complex but are otherwise not securely phased.

Many of the major wall junctions in this earlier phase of construction incorporate the burial of a human infant in a large black-burnished pot (i.e. SES 1, F134 and F139 [a likely third, F99/L103 was excavated in 2012; see Steadman *et al.* 2015]). At least one of these burials was intentionally accompanied by ochre, animal bones, and lithics, and the burials are integral to the fabrication of the walls rather than inserted later. This makes these infant burials distinct from the many others in SES 1 and SES 2 that were inserted under floor surfaces and do not contain offerings.

The earliest yet exposed Agglutinative complex Exterior Courtyard layer is found in LSS 5 (L125); it remained at the close of the 2016 season and will be investigated in 2017. The best preserved areas of this structure, then, and the ones most useful for parsing the life of the house, are the large and small courtyards and rooms 1, 2, and 3. Although the floor plan of the complex remains relatively stable, there are significant modifications over time in terms of built furniture and floor level.

#### *Agglutinated Subphase 2*

There is substantial evidence for a series of modifications to the entire complex, difficult to phase individually due to the similarity of building materials and what may have been very short intervals between interventions. The majority of these modifications affect the interior built furniture and the curtain walls in the courtyard, leaving the load-bearing walls intact and continuing to respect the original floor plan of the structure. Alterations are made with sandy orange mudbricks that contrast with the smooth grey brick of the original construction. In many cases, the construction of bins and benches in this orange brick (e.g., SES 1, F127, F166) effectively consumes the available floor space of a room, perhaps indicating either a shift in storage methods or a transition of these rooms from living to storage space. Many of the bins

were found to contain concentrations of burnt grain, suggesting that the spaces were used for domestic food storage.

The large and small courtyards seem to have been little modified in this phase, except for a quarter-circular platform or step (SES 1, F157) built into the southwest corner of the small courtyard in the Subphase 2 sandy orange brick. Facing bricks on the abutting wall (SES 1, F102) suggest that this feature might have been associated with a raised threshold between the large



Fig. 4. Photo of burned beams (F81) in LSS 5.

and small courtyards, but this is uncertain. Apparent in this subphase is a large hearth or oven (LSS 5, F104/L119), built against the external western courtyard wall (F80). Extensive areas of phytoliths in LSS 5, L101, and in L120 in front of the hearth (LSS 5, F104) in the large courtyard indicate that the courtyard surface was covered with matting. There is very little plaster in this phase, except for a strip about 2 m wide that leads into the Exterior Courtyard from the presumed street entrance on the west. This stands in contrast to courtyard treatments in later phases when plastering seems to have been more of a norm.

The Agglutinative Subphase 2 probably ended in the fire that left sooty ash in several places in the excavation area and baked the faces of some of the mudbrick walls, primarily in the south of SES 1. The effects of a destructive fire can certainly be observed in the large courtyard, where the charred collapse of the sunshade that employed the horizontal beams noted above (LSS 5, F81, Fig. 4), was left in situ and sealed under other debris before the next phase of construction.

### **Burnt House Subphase I and Non-Domestic Building**

Perhaps in response to this fire, the entire complex was extensively rebuilt with increased use of stone, and the main part of the house was moved to the north of the area. This rebuilding corresponds to more global changes across southwest Asia, including the florescence of the Uruk system, which may have had some impact on the Çadır settlement (Steadman *et al.* ND). Even with this rebuilding, the major Agglutinated walls were respected, being rebuilt or, in many cases, reused. This would indicate that the inhabitants of the Burnt House took up residence shortly after the fire in the Agglutinated complex and may have even been the same group, who were taking advantage of an opportunity to update and improve a compromised structure. The large courtyard was plastered over, sealing the burnt debris underneath, and the hearth was moved away from the west wall and into the center of the courtyard (see reports on the Burnt House occupation: Steadman *et al.* 2007, 2008, 2013, 2015). The rest of the Agglutinated complex, which seems to be serving as auxiliary space to the new Burnt House, begins at this time to transition toward more industrial use. On the south side of the complex, the floors of rooms 2 and 3 were raised to courtyard level with a packing of large orange mudbricks, although square areas in the rooms were left at the original level, probably to make storage pits. The mudbricks used for packing are the same sandy orange as those used for modifications in the Agglutinated Subphase 2, but are significantly wider and flatter, making them easy to distinguish. The packing also seals a layer of ash, probably left from the earlier fire.

The wall (SES 1, F160) between rooms 2 and 3 was cut down to the new floor level at the same time that the rooms were filled, and the surface between packing and wall stub was smoothed with a layer of orange clay plaster. The raising of the floor levels and demolition of walls suggests the loss of at least part of the roof or second story, and the conversion of this space from interior to exterior.

It was also in this earliest Burnt House subphase that stone walls in SES 1, F123 and F109 (see Fig. 2), were constructed, demarcating the area of the Non-Domestic Building (Steadman and Hackley 2017). This carefully constructed building interrupts the eastern edge of the Agglutinated complex, and its floor level was lowered and leveled, removing any traces of



the eastward continuation of Agglutinated walls. Within the building was an unusual symmetrical arrangement of three infant burials in large black-burnished jars similar in style to those built into the corners of the earliest Agglutinated walls, suggesting a continuity in the practice of infant burials associated with structures. The floor was laid over these jar burials, and each had a pot emplacement over it (see Steadman *et al.* 2015 and Steadman and McMahon 2015 for detailed discussion). Also recovered from this space were two figurines, a stone amulet (Steadman and McMahon 2017), and burnt clusters of wild and domestic grain, as well as a large quantity of fruitstand pottery.

### *Burnt House Subphase 2*

A hearth fire in the large courtyard once again damaged the main building, which was severely compromised and had to be shored up in several places, though it was occupied for at least a while after the fire (Steadman *et al.* 2013). Perhaps it was at this juncture that domestic activity shifted elsewhere and the courtyard area was given over to industrial or public use, indicated by large bread ovens and numerous small hearths. Considerable evidence points to pottery production on an extra-domestic scale, although it is unclear if this was occurring before or after the fire, or both (Steadman *et al.* 2013). The new enclosure wall (LSS 5, F93) was built over the brick packing of Room 2 and also Room 3 on the southern edge of the complex, perhaps to brace the architecture from erosion down the slope of the mound, clearly already destabilizing the area. This new enclosure wall disregards the plan of the Agglutinated building, indicating that it was no longer governing the spatial organization of this area.

Close to the inside face of the new enclosure wall, two child burials were excavated in the Burnt House I brick packing. Unlike the earlier jar burials, these are simple inhumations that are inserted into the architecture. The cuts are visible and very lightly plastered. One of these burials (SES 1, F167) cuts both the brick packing in room 2 and the remains of the wall (SES 1, F165) bounding it to the east, indicating that the Agglutinated floor-plan was no longer relevant. Shortly after, the core of the settlement seems to have shifted elsewhere, and this southern area may have been left derelict.

### **Apsidal Phase**

After a period of disuse, at least two horse-shoe shaped structures were dug into SES 1 and SES 2 (see Steadman *et al.* 2015 for detailed discussion). These were roughly 1.5 m across, with thin walls only one brick thick. It is hard to imagine them as dwellings, and given that the previous phase in this area was industrial it seems more likely that the apsidal buildings were related to storage or production. The more western of the apsidal buildings reused the foundations of Agglutinated room 1, indicating that parts of the earlier structure had survived the dereliction of the Burnt House and the subsequent disuse of the area. This phase gave way not long after to the Early Bronze I occupation which featured far flimsier one-roomed (domestic?) structures and open firepits (Steadman *et al.* 2007, 2008, ND).

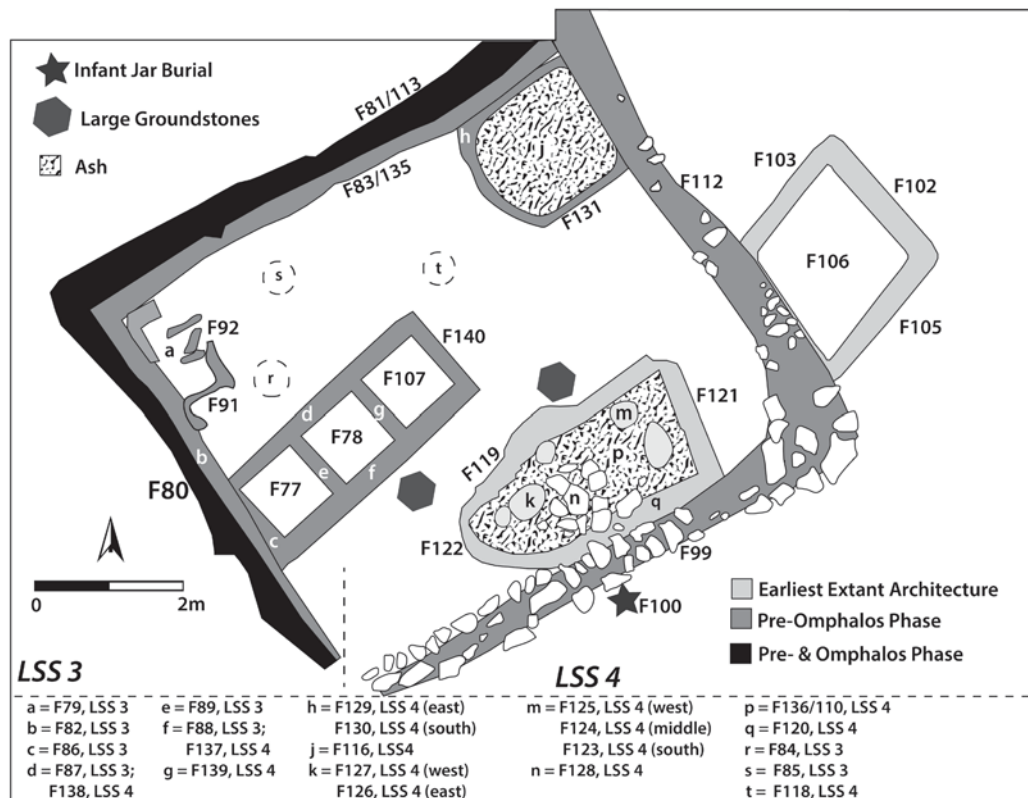


Fig. 5. Plan of the Late Chalcolithic Pre-Omphalos Building Phase in trenches LSS 3-4.

### The Pre-/Omphalos Building Phases in Trenches LSS 3-4

Excavations continued in Trenches LSS 3 and LSS 4 in 2015 and 2016 to gather more information about the previous excavations in 2001 which had revealed the Omphalos Building. The preliminary results of the excavations have suggested the existence of two phases. The pre-Omphalos and the succeeding Omphalos phases are defined according to the architecture, pottery, and small finds.

#### *The Pre-Omphalos Building Phase*

The earliest exposed layer features a collection of largely non-domestic, mostly industrial, features contained within four walls that echo those of the Agglutinated complex to the west (see above). Our belief is that the features herein described are contemporary with the earlier Burnt House phase referred to above. At the end of the 2016 season in LSS 4, hints of earlier architecture appeared, suggesting that lying beneath the current exposure, we may have a more domestic “agglutinated” structure akin to that to the west. Some of the architecture described below likely belongs to this as yet unexcavated underlying structure, reused in the phase described here for non-domestic purposes.

The area in this Pre-Omphalos Building Phase is bounded by fairly substantial walls: F80-83 in LSS 3 and F99, F112, and 113/F135 in LSS 4 (Fig. 5). The external walls are ca. 35 cm wide, and the internal walls, perhaps supports or earlier iterations, are generally 20 cm thick. Stones are placed at some corners and as stabilizers along the walls. The most eastern F112 wall was particularly reinforced with additional stones and a rolled earth mixture within the mudbrick. A similar construction technique was used for LSS 4, F99 along the southern boundary. The features contained within this area are industrial in nature, but may be reusing earlier architecture that was originally domestic.

One clearly industrial feature is the fire installation in LSS 4, located in the northeastern corner of this area. There were two building phases of this feature, which may have been a very large oven, or possibly a kiln, the earliest belonging to this “pre-Omphalos” phase and consisting of F116, and F129-133 in LSS 4. The walls of the kiln were ca. 15 cm wide, and between 1.5 and 1.9 m in length. The floor of the kiln (F133) was made of hard burnt, black colored loam, likely a mix of mud and clay, consisting of multi-layers that correspond to resurfacing. At the base of this floor was a layer of burnt clay that formed the bottom floor.

To the south of this feature, still within the enclosed area, was an oval enclosure (F119-122) 3.8 × 1.8 m in size, full of ash (F110); at the base of this was a floor built of layers of compacted brown earth (F136). This space seems to have functioned as both an ash dump from the kiln, as well as a place to store materials associated with ceramic production and to place newly fired pots. Built into the base (F136) were depressions roughly 15 cm deep (F123-127), topped by circular mudbrick platforms. Contained within these pits were materials associated with ceramic production, including quartz, sea shells, and lime balls, all used for clay temper in the Late Chalcolithic at Çadır. The mudbrick platforms may have also served as a place to rest newly-fired pots while they cooled (often referred to as “firedogs”). The uppermost layer, F110, consisted of an alternating layer of ash, mudbrick, and plaster traces. It is possible that F110 was deposited in this space by the users of a later kiln (F70, see below). Placed atop this deposit was a collection of paving stones (F128) that perhaps allowed users of this space to walk into it or across it. At present we believe the walls of this oval space correspond to earlier architecture, perhaps associated with an agglutinated domestic structure that exists below the extant level, likely consistent with the structure in SES 1 to the east. We hope that 2017 excavations will allow us to explore this possibility.

A small structure northwest of the oval space proved to be a storage space with three small rooms (F77-78 in LSS 3, F107 in LSS 4), each measuring 1.23 × 1.26 m. The exterior walls of this structure (F86-89 in LSS 3 and F137-140 in LSS 4) measure 3.5 × 1.5 m and consisted of compact mudbrick. Inside the middle room two large quartz stones were found, probably associated with the creation of temper for clay; stones were also found in this room which may have been used for the same purpose (grit temper). Also recovered from this storage building were lithics, burnishing stones, polishing stones, a mace head, retouched blades, and obsidian and chert cores; clearly this space served as storage for materials associated with a variety of activities. At present it is unclear, but the walls of this space may rest on deeper walls associated with an earlier agglutinated structure; again, we hope that the 2017 season will reveal more about the origin of this small building.

Three oval pits (F84-85 in LSS 3, F118 in LSS 4) were found in proximity to the storage rooms. Pit F85, 30 cm deep and measuring  $0.42 \times 0.44$  m, was covered with yellowish brown clay from top to bottom. It had a conical shape with a pointed base and may have served as a pot rest for a storage jar. Pit F84, barely 20 cm deep and measuring  $0.68 \times 0.60$  m, was located right next to the storage rooms. The bottom surface was covered with light yellowish brown clay. A number of clay chunks, two polishing stones, a burnishing stone, and some pottery were collected from this second pit. Pit F118 was shallow, only ca. 10 cm deep and measuring  $0.40 \times 0.40$  m; it was empty and may have also been for resting a large ceramic container. Two large grinding stones located near the storage rooms contribute to the interpretation that clay was processed in this courtyard.

A once-rectangular storage bin (F79 [floor], F91-92 [walls]) was located in the northwest corner of the enclosed area. It measured  $0.30 \times 0.25$  m and was quite shallow (ca. 15 cm deep). It contained a large chunk of ochre (a material regularly used to decorate Late Chalcolithic ceramics), lime balls, quartz pieces, lithics, and pottery sherds. It seems to have been an additional storage space to the three-roomed structure to its south; it may have been built in a slightly different phase as well.

As was the case to the east, infant burials were found associated with this complex. One (F100, Fig. 6) was placed under a large stone, next to the stone tumble (F128 in LSS 4) which was possibly providing an entrance to the courtyard complex or a passage across the dump area. A second jar burial was placed to the southeast of the wall complex.

A final structure is found east of this complex. It is a semi-square structure (F102-106 in LSS 4), whose walls poke up above what appears to be an exterior courtyard. It may be

that this structure belongs to the earlier, as yet unexcavated, architectural phase preceding the one just described. We hope to have a better understanding of this structure, which rests just west of the street shown in Fig. 2, after our work in the coming season.



Fig. 6. Photo of the F100 infant jar burial in the Pre-Omphalos Building Phase in trench LSS 4.



### *The Omphalos Building Phase*

The next (later) phase reflected a new layout (Fig. 7), primarily exposed in 2015. The area continued to demonstrate an industrial nature, dedicated to ceramic production, storage, and possibly ceramic distribution activities. This occupation described here is contemporary with the earlier and main Burnt House phases in the SES 1-2/LSS 5 trenches to the east (mid-to second half of the 4th millennium BCE). Located in the eastern half of LSS 3 and the western quadrant of LSS 4 was a room, later becoming two rooms, with a courtyard to the east. The 2015 excavations revealed the earliest iteration of the Omphalos Building first excavated in 2001 and reported on in many reviews of work at the site (Steadman *et al.* 2007, 2008, 2015).

This earliest level of the Omphalos Building, oriented on an E-W axis, is a large space measuring  $8.3 \times 8.63$  m, bounded by mudbrick walls once covered with plaster on the interior (F69 in LSS 3, F84 in LSS 4). These walls were ca. 50 cm thick and were built so that they encompassed the pre-existing walls from the earlier phase discussed above. It may have been divided into two use areas, but these are not separated by any partition wall. We detected slight differentiations in the artifact distribution and laying of the floors, and thus these areas were

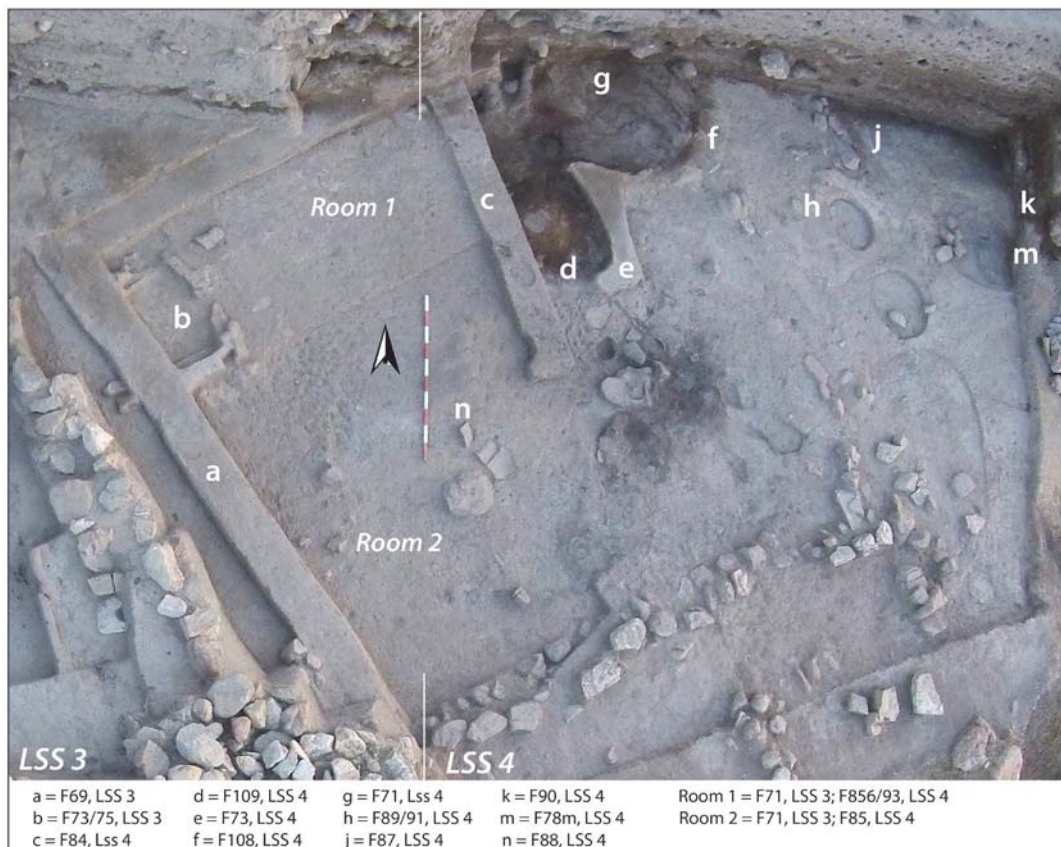


Fig. 7. Photo of trenches LSS 3-4 showing the architecture in the Late Chalcolithic Omphalos Building Phase.



divided into separate rooms in our excavation strategy. Possibly they were separated by an organic divider no longer detectable. Room 1, the smaller room in the northern half of the space has a carefully-made floor (F70/74 in LSS 3 and F86/93 in LSS 4) consisting of compacted earth containing white plaster areas (suggesting the floor was once plastered). A storage area (F73/75) was built into this room, perhaps on the foundations of that found in the earlier phase discussed above. Several layers of compacted earth and plaster were detected, suggesting a renewal of the floor intermittently. The floors in Room 1 were almost entirely devoid of artifacts; it may have served as a storage area for organic materials, or perhaps a sleeping/resting space for those engaged in labors in the courtyard or in Room 2.

Room 2, in the southern half of this area, (F71 in LSS 3, F85 in LSS 4) has two entrances into it, on the southern and eastern sides. It was in Room 2 that most of the artifacts were recovered from inside this earliest iteration of the Omphalos Building. Inside this room was a small bin, near the eastern entrance, from which a unique ceramic piece was recovered. Room 2 contained a variety of ceramic types including “fruitstands,” “Omphalos Bowls” (for which this building is named), stone tools, and ceramics with incised and relief decorations (different from the more standard black, buff, red, or orange burnished wares). Many of the recovered ceramic items showed traces of ochre decoration. There were almost no domestic materials recovered from this room, or the building as a whole, and no cooking facilities were discovered in the vicinity of the building. The building may have been associated with the distribution of ceramics, perhaps those produced in the kiln resting across the courtyard (see below).

The most spectacular discovery from Room 2 came from the bin (F88) just inside the eastern doorway. Parts of a square vessel (with rounded edges), covered with relief decoration in the form of lozenges and incisions once completely infilled with white decoration, were recovered. Rising from the main body of the vessel was a delicately-wrought bull’s head (Fig. 8). There was no base to this vessel and so it cannot “contain” an item. Our assessment of this artifact is that it is an andiron, perhaps only for symbolic use. It resembles similar items found in eastern Anatolia and the Transcaucasus region, dating to the Late Chalcolithic and Early Bronze I periods (Kiguradze and Sagona 2003; Kelly-Buccellati 2004; Kohl 2007: 98-100; Palumbi and Chataigner 2014; Sagona 1998). Its presence at Çadır demonstrates interaction with these regions, or at the very least, emulation of interesting items observed through cultural transmission.

The large courtyard east of the structure is contained entirely in Trench LSS 4. It features a kiln, pits, and the ash dump space on the southern side of the courtyard that was described above. The single-chambered updraft kiln (F71) was built near the eastern wall (F84) of the Omphalos Building and rested above the oven/kiln described above. The wall of the kiln (F108), the remains of what was once likely a dome, surrounded the baking chamber (F71) accessed by an entry space (F109), bounded by a wall/platform (F73). The baking chamber, measuring 2.38 (N-S) × 1.68 (E-W) was filled with a 5 cm thick collapsed burnt mudbrick layer, possibly the remains of the domed superstructure. Underlying this mudbrick was a ca. 9 cm thick burnt plaster layer underlined by a layer of pot sherds (F111; Fig. 9); beneath this was a pebbly mix that was likely laid to create a flat surface over the earlier fire installation described above.



Fig. 8. Photos of ceramic “box” (likely an andiron) with bull’s head and incised (once entirely white-filled) decoration from bin in trench LSS 3.

The F73 feature bounded the entry into the kiln and may have served to keep the heat contained. It was 1.54 m in length and ca. 30 cm wide, consisting of two layers of mudbricks connected by mud mortar. Laid over the mudbrick was approximately 8 cm of thick yellowish-brown clay; traces of plaster at the southern end suggest that the entire feature was once lime-plaster covered. The passage (F109) that F73 and F84 create (the entry into the kiln) is  $3.25 \times .93$  m in size. The surface consists of burnt clay showing scorch marks. Surrounding the kiln, in both the courtyard and the top of a wall, were pits/depressions (visible in Fig. 7), ranging in depth from 5-18 cm; they were clay-lined and largely empty of finds. One pit located in the passage to the kiln was lined with clay and heavily burnt; its purpose is as yet undetermined. A pit in the eastern quarter of LSS 4, F89, was situated midway between the kiln and two ash pits (described below). Pit F89 had a carefully made flat mudbrick surface and side walls and was situated next to, or atop, a platform (F 91) consisting of smooth mudbrick slabs that ran between F89 and the ash pit (F87). A container/vessel may have once rested in F89 which held items associated with running the kiln or perhaps emptying the ash. The pit just to the south may have served a similar purpose.

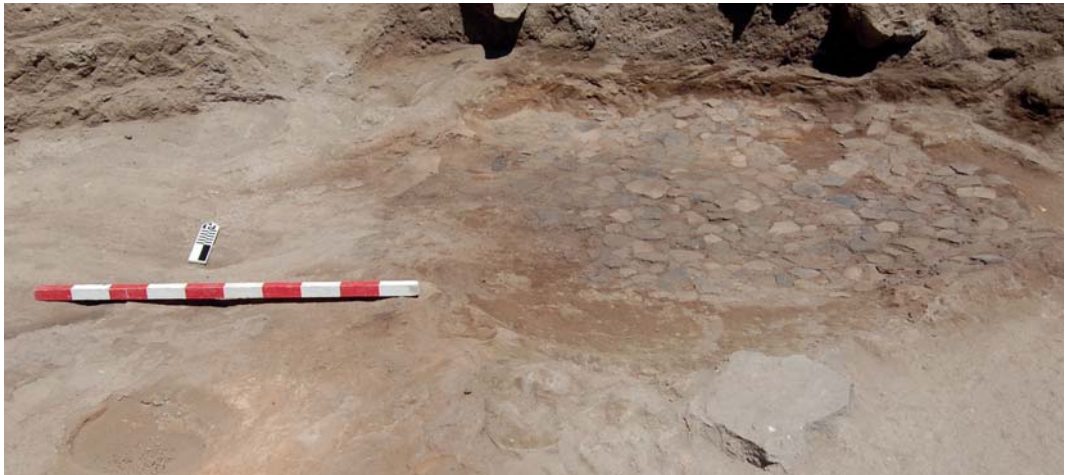


Fig. 9. Photo of the lowest floor of the fire installation (kiln) in the Omphalos Building Phase of LSS 4.

The two ash pits that likely served as dumps for debris from the kiln are located in the northeast corner of Trench LSS 4. The F78 pit is circular and measures  $1.30 \times 1.26$  m, and F87 measures  $1.56 \times .63$  m; they are separated by a mudbrick platform (F90), perhaps to serve as a place to stand while emptying containers of ash. Besides ash, F87 produced burned bone, lithics, and three pieces of metal slag. This may suggest additional industrial activities in the courtyard, or simply that these pits were convenient for emptying trash from around the settlement. As noted above, some of the ash from this kiln may have ended up in the oval space to the south, but once it was filled workers seemed to have turned to these new locales east of the kiln.

The Omphalos Building was renovated and slightly reorganized over at least two more phases of occupation, which included the creation of a bench and internal furniture, all excavated in 2001 and reported on in numerous publications (Gorny *et al.* 2002; Steadman 2007, 2008, 2013). The building fell out of use near the end of the fourth millennium when the main gate into the village was blocked, and the Burnt House to the east was also largely abandoned.

#### THE “UPPER TOWN” LATE CHALCOLITHIC OCCUPATION

Exposure of the Late Chalcolithic/Early Bronze I transitional period at Çadır Höyük centered on trenches USS 9 and USS 10, approximately  $16 \times 6$  meters in size. Trenches USS 9 and USS 10 have been excavated since the 2012 season and will continue into the 2017 season. USS 9 was first excavated in 2000-2001 and reopened in 2012; USS 10 was opened in 2012 to allow for an extension of this area. The whole area was excavated to understand the transition between the Early Bronze I period and the Late Chalcolithic. As a note, all standing architecture and levels were cut in the southern edge of the trenches by the slope and slope

wash, so that no walls or floor were complete or intact at the southern edges. During the 2016 excavation season, the architectural style and ceramics found in the USS 9-10 area were very similar to those from LSS 5 and SES 1 which lie to the south and approximately 1.5 below the currently exposed USS 9-10 occupation. Carbon dates are not yet available, but we believe the currently extant levels of USS 9-10 to be contemporaneous with the latest stages of occupation in the LSS and SES trenches.

### **The Late Chalcolithic Occupation**

A total of three subphases of Late Chalcolithic occupation were excavated in the 2016 and 2015 seasons in these trenches. While there were noticeable changes between phases, continuity was also substantial. Stone and mudbrick walls were often reused in later phases, courtyard floors were replastered hundreds of times, and fire features were built in the same location numerous times.

#### *Subphase 1a-b*

The architecture in the earlier Subphase 1 (Fig. 10a) was split into two additional subphases (a and b), with minimal but notable changes. The architecture in USS 9-10, as exposed by the end of the 2016 season, centered around an open courtyard (Subphase 1a F97, USS 9, [F90 in later Subphase 1b]), flanked by a number of small rooms, likely used as workspaces. Two large parallel stone walls in USS 9, F92 to the east, and F67 to the west, were the center of this phase. Both walls began in the northern baulk, and continued into the slope wash to the south, so the complete length remains unknown. The walls appear to line up with a built mudbrick pathway running NW/SE. This lines up with the “street” shown on Fig. 2 and located in Trench LSS 5. Whether these are related, offering access from the lower town to this higher elevation of occupation is something to be investigated in future seasons.

To the west of wall F92 is an open room (L128) containing a large round mudbrick firepit (F91) in the northern half of the room. The pathway, or courtyard, surface (F97) between these two walls contained dozens if not hundreds of white plaster layers visible in the northern section, with a depth of nearly a meter, indicating that the surface was replastered countless times. These surfaces yielded trash deposits of sherds and bone fragments, indicating that it was likely an open work area or heavily used walkway.

East of wall F67 were a number of smaller rooms. A stone wall, F94 in USS 9, corners with F67, creating a room (F95) featuring a plaster/clay floor that extends into the northern baulk. On the south side of wall F94 was another room (Subphase 1a F93; this becomes F87 in Subphase 1b) which contained a small, but well made rectangular bin (F89) filled with ash, but otherwise clean. The F93 floor consisted of dark brown clay, sloping downward from north to south. Only a rather small amount of pottery and bone were found inside either room. The Subphase 1b F87 floor yielded a perforated ceramic disk and ceramic stopper. The fill between the F93 and F87 was made up of many dense layers of clay flooring, showing that there was a slow, continuous use and reuse of this area.







Further east, numerous walls created a series of small rooms in Trench USS 10. All the rooms had sloped floors consisting of dark clay, with numerous mudbrick platforms, bins, and fire features throughout. The slope of the floors, often quite extreme, was one of the more puzzling aspects in the excavations of this area. The floor slopes were consistently maintained to the Early Bronze Age occupation. However, it was not uncommon for the slope of the floors to change angle in different phases, causing some of the later phases to cut into the earlier floors during construction, and making interpretation of these construction phases quite challenging.

The one substantial wall in this Subphase, F83 in USS 9 and F100 in USS 10 (the southern extents of which are lost to the mound slope), juts into an oddly-shaped room represented by floor F136 in USS 10. This floor was unusual in that it was flat, consisting of hard-packed black clay (cut by a later construction of a sloped floor described below). Contained within this room were a number of mudbrick platforms. The first was circular (F125 in USS 10), with a similar platform (F132) located in the northeast corner of the trench. A third was a larger rectangular platform (F131), with a rectangular clay-lined bin (F126), dug into the western edge. A baked clay loomweight and ceramic fragments came from this bin. This room was bounded in the south by a small curved mudbrick wall (F129 in USS 10) and an equally small wall to the east (F127), both of which were cut or reused by Subphase 1b features. East of wall F127 was a triangular bin (F124 in Subphase 1a, F122 in Subphase 1b) with a sloped hard-packed clay floor with signs of white plaster, under layers of laminated plaster floors. The floor sloped downward from north to south, with the floor preserved down the length of the feature. The matrix in this area, especially near platform F132, contained unfired clay with small pebble inclusions, suggesting that ceramic production was one of the activities carried out here.

A rectangular room in the eastern half of USS 10 (F138 in Subphase 1a, F128 in Subphase 1b; surrounded by mudbrick walls F104, 116, 123) also featured a largely flat floor with only a slight slope from north to south. The floor consisted of plaster layers; the norm in this area is for white plastering to be used for exterior surfaces and packed green clay for interior surfaces. However, the look of this room suggests it might have been an interior space.

At the southern edge of this entire USS 10 complex was a large circular fire installation (F118), possibly a kiln or oven. The fire installation was the fifth in a series of fire features all located in roughly the same place, discussed more thoroughly below. This iteration was a round, well-fired mudbrick domed structure, though the entire southern half has been lost to slope wash. F118 was in use during both subphases, though in Subphase 1a, a large bin, F135, was built on the west side of it. F135 was a large, roughly parabola shaped clay-lined bin which may have functioned as an ash dump for F118.

### *Subphase 2*

In this later subphase (Fig. 10b) there was only moderate change in the architectural layout. The most significant change was that the USS 9 floors F93 and F95 fell out of use, and wall F83 and bin F87 were destroyed, thereby creating an open courtyard like that to the west of wall F67. However, F67 was truncated on its southern end to allow for a doorway between the two open areas. The previous F92 wall was encompassed by a later and smaller mudbrick wall (F69) that featured a doorway to the north. The courtyard/pathway to the west in Trench

USS 9 is F79 (also F75), and that to the west of F67 is F80 (also F74). The courtyards were in use for a considerable amount of time, with at least 30 cm of white plastered floor layers preserved. Material found on the surface of these courtyards included remnants of pottery and stone tool production and copper smelting, suggesting that they functioned as open-air workspaces.

At the western edge of USS 9 was a room with poorly-preserved walls, containing a circular fire feature (F77) resting near and partially atop the earlier F91 from Subphase 1. Also in this area, above F91, was an ephemeral fire installation (F81) which may have been the upper remains of F91. East of the courtyards were the now typical series of small rooms built directly above those described above in the Subphase 1 section.

These more westerly rooms were better preserved, built directly over the rooms in USS 10 described previously. A northern doorway from courtyard F80 in USS 9 led to a large, roughly rectangular room in USS 10 built in an earlier (F111) and later (F103) phase. This area was bounded by mudbrick walls, F104 and F109. The floor was significantly sloped and coated in green clay (similar to the remnants that survived in the poorly preserved USS 9 western rooms). All the floors in this area were sloped, often to a significant degree, frequently cutting into the floors of the earlier phase. At the far eastern edge of USS 10 is a floor (F107) on/in which F104 rests; stones, perhaps from a feature to the east, had fallen onto this relatively flat yellow plaster floor.

We have interpreted F103/111 as subfloors, covered by a working surface consisting of wood and/or reinforced matting. This “upper” organic flooring would create a clean, dry storage area underneath. Material remains on F103/111 suggest that wet clay, for ceramic production, may have been stored here. To the south of this complex was a large oven or kiln (F99), constructed with mudbrick and micaceous clay (the latter also clay that is used to make Late Chalcolithic ceramics). This fire installation is directly atop F118, described above. Two smaller fire installations, perhaps for cooking or heating the area (or for open firing of vessels), were found in this complex. Although this area appears entirely industrial, an infant jar burial (F92) was located under the F103 floor. Infant burials in later phases were also found in this area (Steadman *et al.* 2015).

The walls in this phase are consistently thick, between 40-50 cm in width, more than adequate to support a roof and possibly rooftop activities. We believe that Subphases 1-2 date to the very late fourth millennium, which would be contemporary with the last stages of the Burnt House and Omphalos Building in the “Lower Town” trenches (LSS 3-5 and SES 1-2). The two levels of Late Chalcolithic architecture would have created a set of terraced levels up the southern slope of the mound. Inhabitants might have used pathways or ladders to ascend from lower to higher architecture and courtyards. Terracing from the Late Chalcolithic and Early Bronze periods are known from other contemporaneous Anatolian settlements, including Yumuktepe/Mersin (Caneva 2000), Tepecik/Makaraz Tepe (Esin 2001), Kuruçay Höyük (Duru 1994), and possibly Tilbeshar Höyük (Kepinski 2007), though none with the architectural layout theorized at Çadır Höyük. We hope to investigate the settlement structure more rigorously in the coming seasons.

### *Subphase 3*

This latest Late Chalcolithic subphase (Fig. 10c) can be considered “transitional” in that it likely dates to the very end of the fourth millennium, as it turns to the early third millennium Early Bronze Age. Interestingly, from this Subphase and into the Early Bronze Age, the architecture generally becomes more substantial, suggesting that this area of the settlement may have increased in importance. Subphase 3 is likely contemporary with the “Apsidal Phase” in SES 1/LSS 5 to the south, when the “Lower Town” experiences a significant change in architecture and usage, discussed in other reports (Steadman *et al.* 2015, ND; Steadman and McMahon 2015).

Residents used the previously existing F67 wall in USS 9 to create a foundation for a wider mudbrick wall (F63), which connected to an equally substantial wall (F61) extending to the northeast. These walls created a large room with a plastered floor (F65). To the west was a large open space (L100), bounded on the west by another substantial wall (F64). Another open space, F68, was located south of wall F63. Neither of these open spaces showed evidence of plastering and may have simply served as open spaces or light work areas; few artifacts were recovered from these contexts.

The eastern area, primarily in USS 10, continues to feature walls and sloping floors. In some cases walls in this Subphase (F86-88, and F98) partially or entirely reused preexisting walls from Subphase 2. The floor within these walls, F78/F89, still sloped and still used green clay as flooring material; we speculate that a “false floor” of wood/matting rested above F78/F89 to continue creating the underlying storage area. Wall F90, protruding into the space, may have been a bench or flooring support; it effectively turned F89 into a small storage area. Now missing are the mudbrick platforms of the previous Subphase, replaced instead by a small number of irregularly shaped clay-lined bins or pot emplacements (USS 10, F75-76, F96-97). A new kiln/oven, F85, was built directly over its Subphase 2 F99 predecessor. This Subphase 3 iteration is much larger in area, but lacks the mica-rich clay. All areas were relatively clean, but finds suggest that this remained an industrial space, with activities including ceramic production and firing, and copper smelting.

### **Early Bronze I Period Phases**

The Early Bronze I occupational levels in USS 9-10 were excavated in the seasons prior to 2015 and are reported on in several publications (Steadman *et al.* 2013, 2015). Only a brief overview, connecting the EB architecture to that described above, is offered here. In the early decades of the late fourth millennium and into the early third, wall F63 was significantly augmented, becoming wider and stronger, to the extent that we termed it a “fortification wall” during the years of excavation of this more substantial feature (2013-2014); this larger version was designated F45 in USS 9. The F45 wall was very well constructed, with five rows of mudbricks creating a 2 m wide wall, with a foundation made of large stones and boulders. The exterior of the wall was coated in the same green clay known from the floors and walls of the earlier phases. This F45 wall extended for 8.3 m across both trenches. The wall continued across the entire exposed area, though the southern edge was destroyed by slope wash.

Wall F45/F63 connects to, or is part of, a substantial fortification system dating to the second millennium BCE Hittite occupation of Çadır; this even more substantial stone and mudbrick Hittite wall, present in the eastern Step Trenches (Şerifoğlu 2014, 2015; Steadman *et al.* 2013, 2015; Steadman and McMahon 2015), as well as emerging in USS 4 just north and above USS 9, used some of the Early Bronze F45 wall to serve as a foundation. It will be some seasons before USS 4 reaches depths sufficient for us to understand the relationship between these two fortification/substantial wall systems.

Just to the south of F45, in Trench USS 10, the area continued to feature a series of rooms and storage bins with similar layouts to previous periods/subphases (Steadman *et al.* 2015: Fig. 5). Floors continued to be sloped and built with green clay. A fourth-generation fire installation (F69) was built atop its predecessors, though it was somewhat smaller in size. It appears that this area, though now located “outside” the town perimeter defined by F45, continued to function as an industrial work area.

### The Prehistoric Phases at Çadır

As already noted, the Early Bronze substantial perimeter wall was used as a foundation in the Late Bronze Age for the construction of an additional wall (now under excavation in USS 4). This wall, therefore, stood as some type of vanguard for the site spanning the Bronze Age centuries. In the Late Chalcolithic, the perimeter wall, noted as the “Enclosure Wall” in previous reports (Steadman *et al.* 2007, 2008, 2013), encircled the “Lower Town.” At the turn of the millennium, within a century before or after this time, the settlement seems to have contracted so that the majority of the occupation moved up the mound, though some occupants continued to use the area that was once the thriving Lower Town. In the Early Bronze period this Lower Town area was used by people building small single-roomed structures with small firepits scattered in open areas; the Omphalos Building and Burnt House were abandoned and destroyed, and the Enclosure Wall gate had been blocked. What had been, in the previous millennium, a Lower Town with a vibrant area with public and substantial architecture, became an area existing outside the main settlement, perhaps devoted to storage, temporary or marginal housing, and a very different lifestyle than had been enjoyed in the Late Chalcolithic.

### THE SECOND MILLENNIUM ON THE EASTERN AND UPPER SOUTHERN SLOPES

The majority of our 2015–2016 work on the eastern slope took place in trenches ST 7 and ST 2. A concerted effort in the 2015 season was devoted to removing a significant (1.5 × 6 m) pedestal along the western baulk in ST 2. This was left in place to support an Iron Age wall excavated in seasons past. However, by 2015 the wall was in partial collapse, and it was determined that removal of it and the pedestal was the best course of action. The removal of this narrow ledge (Fig. 11) offered us the chance to check our theories concerning the construction sequences behind the two building phases of the eastern slope Hittite fortification walls (Steadman *et al.* 2013, 2015; Steadman and McMahon 2015). The 2015 excavations confirmed the two major building phases we have described in the past: an upper later phase constructed upon an intentionally laid terrace support which covers and serves to level an earlier lower

phase. This upper phase likely dates to the second half of the second millennium BCE and is contemporary with the largest and latest stone and mudbrick (4 m wide) Hittite casemate wall encompassing the settlement on the eastern slope. In the pedestal, a hard-packed mudbrick surface (L46-47) sloped upward from north to south (the same sloping direction of the Hittite fortification wall), and would have met with wall F11 in ST 7 (the wall belonging to one of the rooms described below; not pictured here). Associated with this exterior area is an oven (F52) resting on a plaster surface (F54) at the base of L46, and a nearby ash lens (F53). It appears, then, that the area in ST 2 remained a type of courtyard and open area throughout the second millennium, in both the earlier and later phases. Below this was a mixture of ephemeral layers, some plastered, along with a thick (over 50 cm, L49-52) layer of mudbrick tumble likely resulting from the substantial structure described below. The mudbrick tumble had been packed down in order to create the “terrace” on which the later second millennium phase architecture was constructed, including surface L47. The lower, earlier phase, which is currently exposed in both ST 2 and ST 7, is contemporary with an earlier, smaller, Hittite casemate wall (2 m wide) directly underneath its larger and later iteration. The earliest surface exposed here is F59, which is contiguous with wall F56 and with F76 (the large building discussed below) in ST 7.

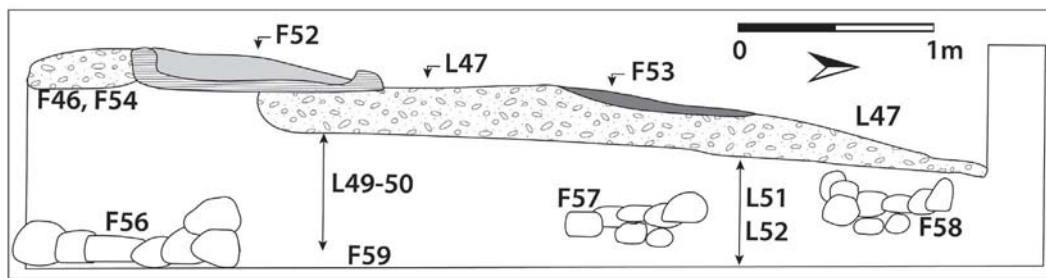


Fig. 11. Top: section drawing (west section) of “ledge” excavated in ST 2 in 2015; bottom: photo of same ST 2 ledge looking northwest.



The 2015 excavations in ST 7 removed two rooms, exposed in previous seasons, that belonged to the later occupational phase. These two rooms rested on an intentionally laid terrace consisting of L86, L105, and L107-8 (which equal L49-52 in the ST 2 ledge). Cut into these were mudbrick steps that allowed residents in these rooms to descend down to what may have been open courtyards just inside the later Hittite casemate wall (see Steadman and McMahon 2017 for detailed description). Lying beneath these rooms and the terrace pedestal on which they had been built were the foundations of a substantial second millennium building, the mudbrick wall superstructure of which likely formed some of the terrace fill in both ST 7 and ST 2 (Fig. 12). What is extant in Trench ST 7, we believe, is the eastern wall and forecourt of this structure. The building is at least 6 m wide on the N/S axis, but its length is impossible to estimate given that the structure extends westward into the mound. Two courtyards fronted this eastern end of the structure; the wall foundation of the structure itself (F76) consists of a mixture of mud and clay packed around wooden beams laid in a lattice pattern (Fig. 12) supporting a mudbrick superstructure. This construction technique has been observed at other second millennium sites such as Maşat Höyük (Özgüç 1982), Oymaağaç Höyük (Czichon *et al.* 2011), and Kuşaklı-Sarissa (Müller-Karpe 1998, 2000; and see Beckman 2010 and Mielke 2009 on Hittite construction techniques).

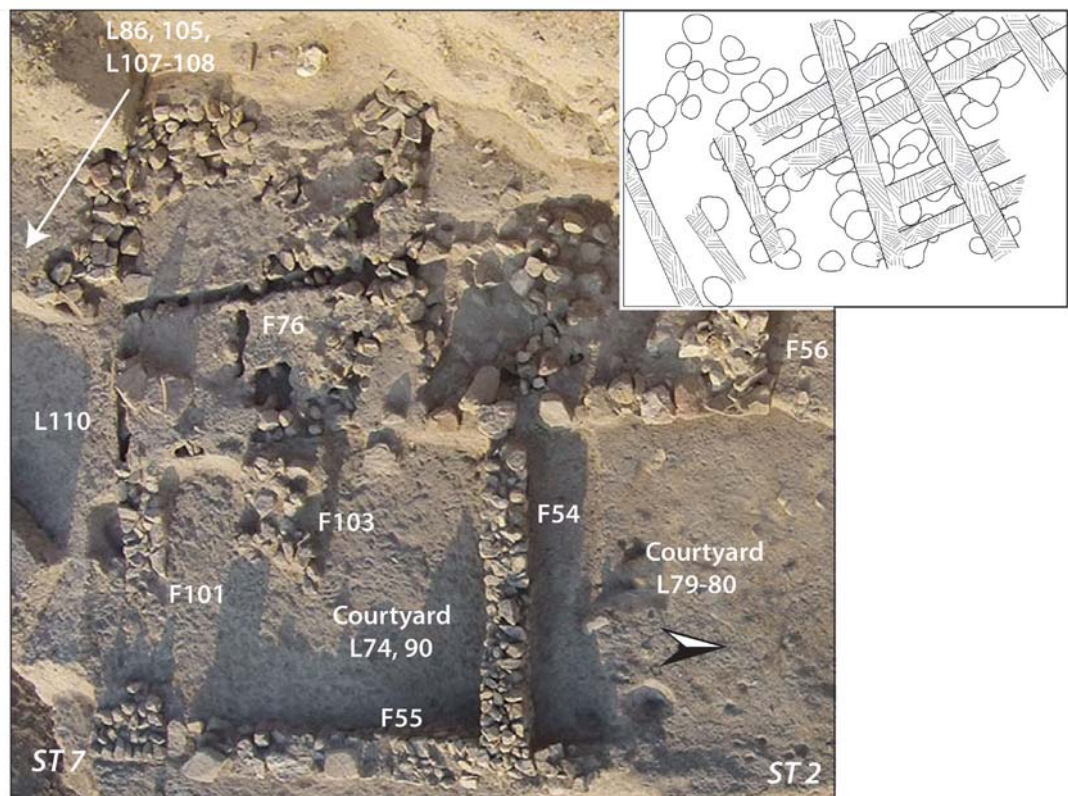


Fig. 12: Aerial view of trench ST 2 and 7 showing areas of excavation; top right, sketch of remains of F76 area “lattice” consisting of clay, wood, and rocks (based on sketch provided by S. Spagni).



Fig. 13. Left: stratigraphically lower infant burial associated with building (burial is F99, cut is F98, matrix is L122, cap is F97); Right: upper infant burial placed within terrace fill (burial is F84, cut is F83, within matrix L110).

During the 2016 season two infant burials were found in Trench ST 7. The stratigraphically lower burial (F 97-99 and L122) was located at the southeastern corner of the large structure's foundations, emplaced within the clay and mud that formed the foundation matrix (Fig. 13). Approximately 1.10 m higher was a second, later, infant burial (F83-84; Fig. 13) found within the terracing matrix (L110). The earlier burial may have been meant as a foundation deposit for the large Hittite-period building; a very fine ground stone tri-footed bowl was also found buried next to this structure (Steadman and McMahon 2017). The later burial may have been more closely associated with the construction of the terrace above this building, upon which the later phase of occupation was eventually built (the "two rooms" mentioned above). While there have been numerous infant burials found associated with our Late Chalcolithic and Early Bronze Age occupation, these are the first two found associated with second millennium architecture at Çadır. Unfortunately the purpose of this large building is at present unknown to us. It does, however, suggest a substantial Hittite presence at the site dating to the mid-second millennium BCE.

Excavations proceeded in USS 4 on the Upper Southern Slope in 2015 and 2016. As always, the complicated stratigraphy in this trench makes interpretation a challenge. Radiocarbon dates, and the ceramic assemblage, indicate to us that excavations have proceeded below the Early Iron Age levels into the Late Bronze Age, likely during, or just after, the collapse of the Hittite Empire. The last two seasons of work have revealed a complicated collection of mudbrick remains, some of which began to resolve themselves into two large mudbrick walls running more or less east-west across the trench. It is possible that these were a continuation of the large stone-built casemate wall present in the eastern slope Step Trench, built only with mudbrick on the southern side. The tops of these walls have been carved up into rooms and work spaces, making the interpretation of their original function difficult. We hope that the 2017 and 2018 seasons will allow us a better opportunity to interpret the walls and the area they enclosed.

## THE MIDDLE BRONZE AND IRON AGES ON THE WESTERN SLOPE

Excavations at the western side of the mound, which was not investigated before, started in 2015 with the hope of revealing the settlement history on this part of the höyük. The excavations were conducted by a team of scholars and students from Bitlis Eren University, University College London, Bilkent University, University of Cambridge, and Çanakkale Onsekiz Mart University. Our team worked in three trenches (WSS 14, WSS 15, and WSS 5) although not in their entirety, and only excavated for two weeks each season, working for a month in total. Valuable information concerning the Iron and Bronze Age levels at Çadır Höyük was gathered by the excavators in this limited period, which can be seen as a successful start to the western slope operation.

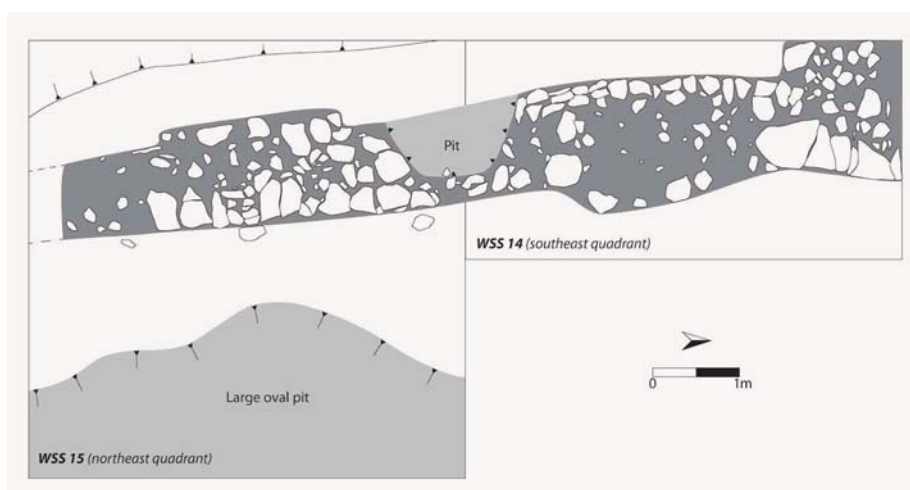


Fig. 14. Plan of trenches WSS 14-15 showing the Middle/Late Iron Age wall and related features discussed in the text (drawing by Nazlı Evrim Şerifoğlu).

The excavations in this area focused on the lower reaches of the slope, with the hope of studying the connection between the mound with the fields immediately below. The excavations started in 10 × 10 m trenches WSS 15 and WSS 5, with the former located just above the latter. Our team came across a stratum of pebbles and river stones of various sizes just below a hard-packed greyish yellow layer in the eastern half of WSS 15, which we first thought to be a Byzantine architectural feature of some sort; we began removing it to see what might lie below. This operation continued until the end of the 2015 season, but we were unsuccessful in removing the whole pebbly riverbed soil stratum. However, we could at least identify this layer as a huge oval pit, with a diameter of almost 3 m, and could more or less define its western limits. It should be noted that the pit contained no archaeological material and was filled purely with riverbed soil laboriously carried here for a special reason. On the other hand, the top part of a stone wall foundation with a north-south alignment, which was located just to the west of the pit, made its first appearance at the very end of this season. The pottery associated with this wall and the surface layer related to it was understood to range from Middle to Late Iron Age, allowing the wall to be dated to this period.

The 2016 excavations in this area were devoted to better understanding the huge pit and the wall. To reach this goal, the operation of emptying the pit and excavating the area around the wall continued. In addition to this, we started working in the southeastern quadrant of WSS 14 to reveal the northern continuation of the wall. As we neared the bottom of the pit, the stones became larger and larger, and therefore harder to remove; eventually, after removing a 1.20 m deep

pebble and river stone fill, we reached the base of the oval pit. At the same time, our team continued investigating the wall in WSS 14 and WSS 15, and managed to reveal the whole extent of the wall within the excavated area.



Fig. 15. An aerial view of the Middle/Late Iron Age wall and related features in trenches WSS 14 and WSS 15.

Based on our initial observations, we believe that the wall, which is approximately 1 meter thick, was either built as a part of a defensive system or was a retaining wall built to stop soil erosion at this edge of the mound (Figs. 14 and 15); (note that a similar strategy may have been employed in the southern slope Late Chalcolithic occupation, described above). The wall seems to have thick buttresses at regular intervals, where the wall thickness reaches 1.20 meters. A part of the wall was damaged by a later pit just at the dividing line between WSS 14 and WSS 15, and the southern edge of the excavated part of the wall was washed away by soil erosion at this steep southwest edge of the mound. The deep pit filled with river stones might be directly related to the wall and may have helped to strengthen the foundations by keeping the soil dry and allowing water to drain out, especially during the rainy seasons. We hope to reach more precise conclusions once more of the wall and pit are excavated in 2017, as our work in WSS 14 will continue to achieve this goal. This work might be accompanied by geophysical investigations in the area to which the wall is believed to extend, which would allow us to collect more data about the nature of this structure.

The excavations in the western half of WSS 15 were only conducted at the southwest quadrant of this trench in 2015. After the removal of a probably post-medieval, north-south aligned stone retaining wall, located under a half a meter thick topsoil and natural fill layer, an orange coloured floor was reached. The badly damaged remains of another north-south aligned stone wall at the northern edge of the excavated area seem to be contemporary with this floor layer. Based on the pottery, this archaeological level was provisionally dated to the Early Iron Age, but this will become clear only after the pottery studies are completed.





Fig. 16. A view of the mudbrick wall unearthed in trench WSS 5.

tional period between the Middle and Late Bronze Age (Steadman *et al.* 2013: 127-129; 2015: 96-97). The pottery collected from this level and a copper alloy pin<sup>3</sup> found in the fill just above the wall support this date, but once again, it should be noted that this date is provisional and only with further investigations will we be able to date this level more precisely (Fig. 17; von der Osten and Schmidt 1932: 94-96; von der Osten 1937: 106-110).

The work in WSS 5 continued in the area just to the west of the mudbrick wall to define the limits of this structure. During these excavations, which were conducted at the very end of the 2015 season and only for two days, two lower levels were identified, which might be representing phases of the Middle Bronze Age, or maybe even going deeper into the end of the Early Bronze Age. The excavations in WSS 5 will hopefully continue in 2017, and we may even consider expanding the excavated area to include WSS 4 in order to investigate the northern extension of the mudbrick wall and the two lower levels in further detail.



Fig. 17. The second millennium BCE copper alloy pin from the southwest quadrant of WSS 15.

<sup>3</sup> The pin (FCN number 18026) was studied and provisionally dated to the second millennium BCE by Dr. Stefano Spagni, the project's metals specialist.

The excavations at the eastern edge of the eastern half of WSS 5 and at the western edge of the southwestern quadrant of WSS 15 revealed a one meter thick, north-south aligned mudbrick wall, approximately half a meter below the Early Iron Age floor (Fig. 16). We believe this wall to be a continuation of the Early Hittite fortification wall, parts of which were unearthed at other parts of the mound in the past, and we therefore dated it to the transi-



## THE BYZANTINE OCCUPATION ON THE NORTH TERRACE

In 2015 we worked in three trenches on the North Terrace: NTN 5 and NTN 8, opened in 2014, and NTN 10, adjoining NTN 5, opened in 2015. No work was carried out on the North Terrace in 2016.



Fig. 18. Photos of trench NTN 5. Top: aerial view of trenches NTN 5 and NTN 10. All numbers correspond to contexts in NTN 5 unless otherwise noted: 1 = F4; 2 = F1; 3 = F2 (F6 in NTN 10); 4 = F51; 5 = F45; 6a = F26-29; 6b = F2 and F5 in NTN 10; 7 = plaster surfaces F15, 18, 24-25; 8 = F52; 9 = L40 and L42 (removed), F53 shown in photo; 10 = F55. Bottom left: photo of F18 plaster surface underlying walls F1 and F4. Bottom right: photo of damp ashy pit (L40).

### Trenches NTN 5 and NTN 10

The NTN 5 and NTN 10 trenches serve as perhaps our most enigmatic trenches on the site, which is why we have published little on these areas in past reports. However, these trenches were backfilled in 2016 and it is therefore time to offer what limited interpretations are possible. NTN 5 was first opened in 2014 in response to 2006 magnetometry findings that suggested a circular anomaly, which we interpreted as a possible cistern. The location of the anomaly, approximately 15 m from a Byzantine residential structure, seemed to mesh with the idea of a nearby water source. The majority of the 2014 season was spent carefully removing a significant number of head-sized stones that were clearly collapse from once-standing walls. By the end of the 2014 season several walls had emerged, and it is with these that we began our 2015 season.

The NTN 5 10 × 10 m trench was expanded to the south to include a 2 m strip belonging to NTN 10 (Fig. 18). We opened NTN 10 to attempt to understand the stone architecture next to a strange pit feature in the center of NTN 5. Three separate stone-based architectural features were present in this trench: F1 and F4 in the northeast quarter of NTN 5, F2 and F51 in the southeast quarter (F2 = F6 in NTN 10), and a complex set of stonework in the southwest quadrant continuing into NTN 10 (F26-29 and F45 in NTN 5, F2 and F5 in NTN 10). Embedded within this was a pithos (F28) surrounded by stones. The architecture in the eastern half of the trench appears to be contemporary, with the exception of F51 which was built in an earlier phase and may have extended under F2. Underlying F1, F2, and F4 was a highly decayed plaster surface (F15, 18, 24-25). This surface seems to have extended from the F45 wall next to the western baulk toward the east in a 2.5-3 m swath. Several pits, between 1 and 1.2 m in diameter, were cut into this decayed plaster surface. These were largely empty and may have served as large pithos rests, similar to those in NTN 8 (see below). The presence of pithos jars may explain a strange anomaly associated with walls F1 and F4 and this surface.

Walls F1 and F4 were built between 20 and 40 cm above the plaster surface. The section beneath these walls shows an unusual pattern of vertical “bricks” of plaster separated by the mudbrick/mud swirl that constitutes many Byzantine floors on the North Terrace (Fig. 18). This interspersing of plaster and mudbrick created a surface that sloped toward the southwest, eventually running up against (and possibly under) wall F45. Wall F1 was later built atop this sloped surface. The purpose of the sloped surface is unclear, but serving as a support for large pithos jars is a possibility. The eventual construction of walls F1 and F4 suggests that the pithos jars had been removed and a walled area was created, perhaps using the existing F26-29 walls, and adding wall F2. These walls may have been built to surround the central pit feature which also seems to have been cut from the plaster surface level.

The large feature in the center of NTN 5 serves as the area’s most enigmatic feature. It is surely the anomaly that appears in our 2006 magnetometry results, but it does not seem to have functioned as a cistern, nor have we been able to arrive at any satisfactory alternative interpretation. After we removed the stone scatter mentioned above, the central area of the trench presented a dark, ashy, and damp oval area (L40) roughly 2 × 4 m in area (Fig. 18). The area was surrounded by a mudbrick feature (F52) that served as type of boundary around the ashy lens, and embedded within it was wall F51. At this point, early in the 2015 season, it seemed our

suspicion of a cistern had been confirmed. In fact, we experienced several days of heavy rains and this area remained so water-logged that we could not excavate it for almost a week. Eventually we put in a small test sounding (visible in Fig. 18) which revealed that the ashy damp layer was only about 15 cm in depth. We removed this matrix (L40) to reveal a thick (40 cm)



Fig. 19. Left: Thurible mentioned in text; right: coarse ware vessel with cross.

layer (L42) of ash and mudbrick riddled with rodent activity. This layer rested on a new matrix consisting of sand and mudbrick (F53), with a partially plastered “step” (F55). At the base of F53 pit cuts were in evidence, extending beyond the boundary of the entire feature (see Fig. 18), indicating these lowest pits belonged to an earlier phase of occupation. The walls in the western and southern areas of the open trenches (F26-28 in NTN 5 and F2/F5 in NTN 10) are likely contemporary with the central pit feature or were possibly built before its construction. The oldest wall in the trench, given its depth and differing construction (very large stones as opposed to head-sized) and construction of F26 upon it, is wall F45 in NTN 5.

Described here are three phases of construction in NTN 5 and 10, the earliest wall F45, along with the plaster surface (F15, 18, 24-25), soon followed by construction of F26-29, (the latter the pithos) and likely the central pit structure (perhaps including wall F51). Last were the stone walls in the eastern half of the trenches, F1, 2, and 4 in NTN 5 and F2, and 6 in NTN 10. As with the majority of the material on the terrace, the ceramics were largely non-descript coarse wares which are still in the process of being analyzed. There were few notable finds from this trench, although the northeast section of the trench revealed a small thurible or lid, located between F4 and F7, as well as a small piece of a coarse ware vessel with a stamped cross on the bottom (Fig. 19). Found near both of these was a human jawbone from what may have been a very shallow grave, dispersed by a plow in the modern period.

### Trench NTN 8

Trench NTN 8 was opened due to its connection to the other six trenches in which we have revealed a large Byzantine domestic structure (Fig. 20) reported on in numerous publications (Cassis and Steadman 2014; Şerifoğlu *et al.* 2015; Steadman *et al.* 2013, 2015; Steadman and McMahon 2015). The goal of the NTN 8 trench was to continue exposing this large domestic structure and particularly to discover whether it extended to the northeast. Secondly, we wanted to continue documenting the building’s phasing from earliest construction to last usage. This portion of the building, as well as its connecting walls in the adjoining NTN 7, was built at least as early as the 5<sup>th</sup>-6<sup>th</sup> centuries CE, based on radiocarbon dates (Beta #391285 Cal BC 415-560) and on a coin of Justinian I (r. 527-565 CE) found near the NTN 8 architecture.





Fig. 20. Plan of architectural phases exposed on North Terrace (Trenches NTN 5 and NTN 10 not shown). Blue indicates the earliest architectural phases.

Radiocarbon dates from nearby architecture indicate that earliest construction may have even been several centuries earlier, but presently only remnants of this earliest footprint remain as later rebuildings reused stones from the walls and recast the architectural footprint (see Fig. 21).

Excavations in NTN 8 over the 2014-2015 seasons demonstrated that this domestic structure, perhaps initially built as variation of the Roman-style villa belonging to an important personage in the area, did indeed extend to the northeast and was associated with a large open courtyard to the east that may have served as a storage area (there is also an open courtyard to the west in trench NTN 7) (Fig. 21). The floor of this eastern courtyard was built in a series of phases, perhaps first constructed with the earliest building foundations. The lowest horizontally exposed floor in the eastern courtyard is F34, which is a hardened mudbrick floor, threaded with white which may represent phytolith (plant?) remains, or plaster reinforcement in the mudbrick. Cut into this surface were at least four large pits (F21, F28-30), approximately 1.2 m in diameter, that we believe originally contained storage pithoi. The pit cuts extended below the level of F34. Lying atop F34 was F18, a plaster surface which seems to have been laid after the pithoi were placed in the courtyard; F18 may have stabilized the pithoi in the ground. At some point the pithoi were removed and “trash,” including stones, broken pottery, glass, and bone, were thrown in with a mix of sandy clay and packed mud. This “trash” may have been placed in the pits by those who removed the pithoi to create a somewhat level surface in the courtyard. It is unclear when the pithoi were removed, but it may have been after the second major period of occupation of this structure (ca. 8<sup>th</sup>-10<sup>th</sup> centuries), after which the structure seems to have reverted to communal use by the local farming occupation (Cassis and Steadman 2014; Steadman *et al.* 2013). Unfortunately there is no clue as to what the pithoi may have

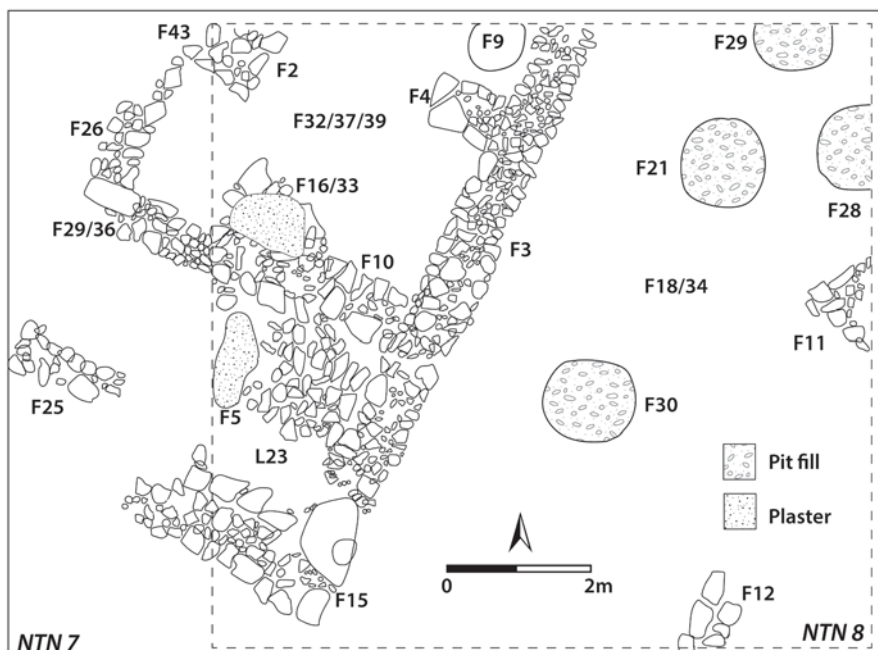


Fig. 21. Plan of trench NTN 8 showing architecture and contexts discussed in the text.





room, but it is unlikely that the basin was built contemporaneously with this surface. Underlying surfaces, F37 and F39 respectively, also consisting of packed mudbrick, seem also to have been built around the basin rather than cut by its installation. Excavations in 2015 did not reach the floor level immediately underlying the basin to see if this is the original stratigraphic relationship (and we were unable to return to this trench in 2016). Our best inference at present is that the basin was built so that it was partially sunken into the floor (perhaps built with our lowest excavated floor level F39) and partially above the floor. As new floors were laid, it was eventually largely flush with the latest floor (F32). The plaster basin is Roman in style and likely dates to one of the earliest construction stages of this architectural complex. This room, therefore, standing off the northeastern corner of the main structure, may have been dedicated to a special usage, perhaps associated with the materials stored in the eastern courtyard pithoi. The basin suggests the usage of liquids, though whether for water (bathing? washing materials?) or other activities such as food preparation, is unclear. The floors in this room were relatively clean, as were the contents of the basin. At present work on the North Terrace has been suspended, and our efforts are concentrated on the Çadır mound. If we are able to return to excavations on the North Terrace, understanding this architectural complex and its usage will be a priority.

#### THE BYZANTINE OCCUPATION ON THE MOUND SUMMIT

The majority of our Byzantine period work in 2015-2016 took place on the mound summit. A total of seven trenches, most opened to their 10 × 10 m extent, were excavated over the course of these two seasons; four of these were newly opened in 2016. The following reviews discoveries in all of these trenches with the exception of SMT 15 and SMT 8. In the case of SMT 15 the trench is divided into two temporal periods, the lower section below the Byzantine fortification wall dates to the Iron Age and is reported on elsewhere (Steadman and McMahon 2017). During 2015 and 2016, the upper, western half of SMT 15, contained inside the Byzantine wall, was cleaned and clarified. Further work in coming seasons will be detailed in future reports. We reopened SMT 8 in 2016 after a hiatus of 10 years, cleaning and clarifying previously-exposed architecture to determine its relationship to structures in neighboring SMT 3 and SMT 9. Many of the new trenches were designed to test our hypothesis that the interior of the Byzantine defensive wall, which rings the entire mound summit (Steadman *et al.* 2015), was at least partially ringed by rooms; as the discussion shows, it appears we were correct in our hypotheses.

#### Northeastern Summit: Trench SMT 3

In 2015 we expanded SMT 3 to its full 10 × 10 m extent (Fig. 22). Immediately below topsoil, we exposed another pair of walls (F11 and F12) that formed a second room identical to the room exposed in 2014 (Steadman *et al.* 2015; Steadman and McMahon 2015). These walls are built of fieldstones with a rubble core like most architecture on the summit. Fills inside the room (L12 and L16) were silty and contained many large chunks of charcoal. Below the fill we encountered a smooth compacted mud floor (F13), which, unlike the comparable surface in the adjacent room, was not cut by pits. There were no significant finds of any kind, suggesting that the room may have been cleared and then abandoned.

Also in 2015 we returned to the first room exposed in the previous season. Below the packed mud floor (F4) we excavated F8, a subfloor layer, and several levels of dark silty soil with chunks of mudbrick. When we reached the bottom course of the walls in this room, we opened a small sondage against the defensive wall and removed a deposit of very fine, soft soil above a poorly preserved segment of wall (F15) made of stones packed with mudbrick. In this fill above F15 we found a fragment of painted plaster that was common in leveling fills from SMT 18 (see below). It is likely that this wall represents a remnant of the Late Iron Age phase of mixed mudbrick and stone architecture previously uncovered in SMT 4; at the bottom of SMT 18 (excavated in 2013-2014) we found similar mudbrick and stone architecture covered with layers of leveling fill.

In the northeast corner of the trench we exposed architecture outside and below the level of the fortification wall. Here we found F14, an extremely hard-packed mud-plaster layer on top of a stone paved platform (F16) framed by a one course high stone wall on its north edge (F17). This architecture does not relate to any other features in SMT 3 or SMT 4, and its corresponding architecture was likely removed during the construction of the Byzantine tower to its south. The Byzantine builders used F14/F16 as a support for the construction of the massive defensive wall. We believe these architectural remnants date to the Hellenistic or very Late Iron Age.

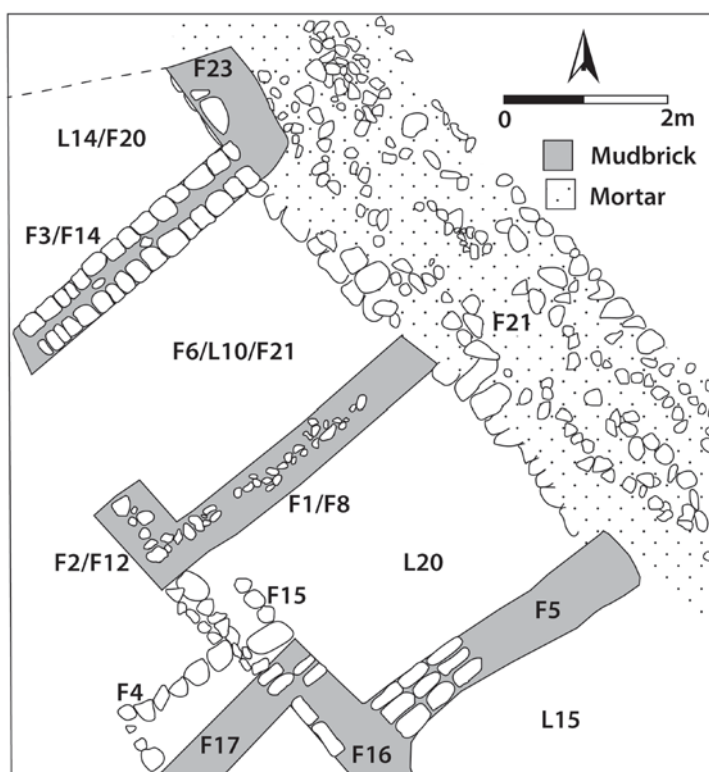


Fig. 23. Plan of trench SMT 9 architecture and features discussed in text.

Outside the complex of rooms, at the west edge of the trench, we excavated considerable collapsed stone below topsoil. The only architecture was F18 (a portion of a robbed-out stone wall protruding from the midpoint of the west baulk; not shown on Fig. 22), and F19 (not shown on Fig. 22), the remnants of a stone wall or platform running perpendicular to F18. Around these installations were multiple amorphous deposits of soot and ash, and a considerable amount of animal bone. Below topsoil and between these two features and the rooms was a packed mud surface cut by two pits (F22-23) one of which extended under

F1. In 2016 we discovered a coin dated to the 11th century (Michael IV, 1034-1041 CE, bronze follis, Anonymous Class C type) providing a terminus post quem date for the interior wall in the first room, F1.

### Western Summit: Trench SMT 9

SMT 9 is located immediately to the southeast of SMT 3 and shares a northern edge with SMT 4. This trench was opened in 2016 because it contains the highest point on the mound, as well as the continuation of the defensive wall. Our single season of work uncovered a series of rooms (Fig. 23) and persuasive evidence for later phases of occupation. Excavation quickly revealed two narrow stone features forming an L-shape (F1-F2). These stones were resting on mudbrick architecture (F8 and 12). At the north of the trench, running parallel to F1, we exposed a large, solidly built mudbrick wall (F3). South of F1, and also parallel to it, we excavated another mudbrick wall (F5).

These walls divide the trench into four rooms and an exterior area in the corner. In the northernmost room, we removed four fill loci. Locus 14 was a dark soil layer with considerable charcoal deposited above a packed mud floor (F20), on which we recovered a bronze cross and a large fragment of a pilgrim flask (Fig. 24). The F3 mudbrick wall was built on top of a solidly built fieldstone wall F14 of the same size and construction as interior walls in SMT 3.

South of this room, in the space defined between F3/F14 and F1/F8, we removed F6, a compacted mud floor surface that articulated with the mudbrick architecture on either side of it. Below this floor surface, we removed L10, a layer of dark brown fill below the level of the Byzantine fortification wall that contained an extremely well-preserved bronze object. This item (possibly a handle) is in the shape of a leaping cat (Fig. 24), which may have parallels in the metal workmanship of northern Mesopotamia (for discussion of these workshops see Snelders 2010). We also found a copper wire strung with red, blue, and green beads. Below L10 we removed a deposit of darker soil with intermixed charcoal. This was deposited on top of F21, an extremely hard, packed mud floor similar to what was encountered in SMT 3.

The third room is narrower, and F18 and 19, the stone walls below F5 and its return wall F16, is built differently from F8 and F14, using smaller, more angularly shaped stones. Much of the interior space of this room was taken up by a pile of collapsed but still articulated mudbricks, excavated as L19 (not shown on Fig. 23). These bricks clearly represent inward collapse from features 5 and 16. Access to this room is provided from the west via a narrow



Fig. 24. Objects from trench SMT 9. Top row: “Leaping Cat” bronze item; bottom left: pilgrim flask; bottom right: arm of processional cross.



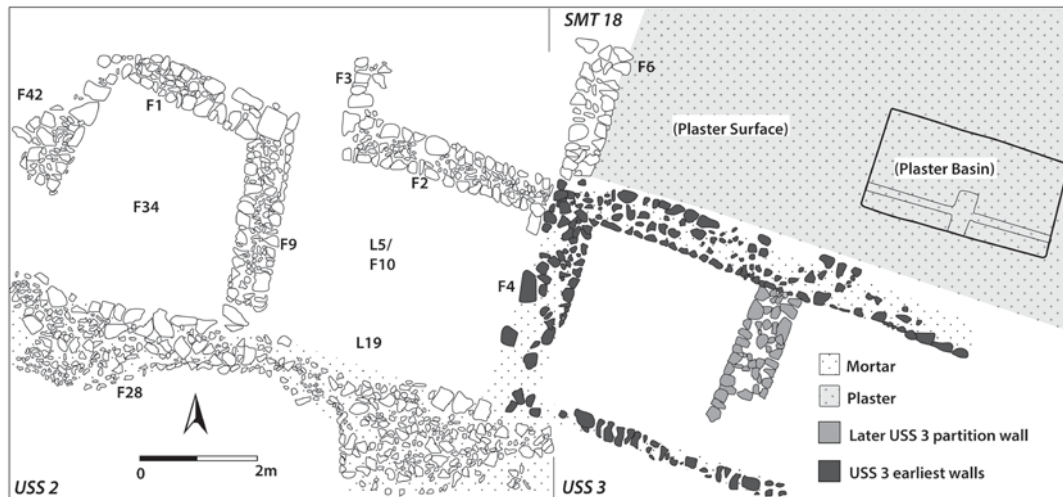


Fig. 25. Plan of trench USS 2 architecture and features discussed in text.

staircase that faces a rectangular bench (F4) made of stones packed with mud. A small portion of an additional east-west running wall (F17) built of mudbrick runs south of F4 and perpendicular to F16. The area south of F5/F18 has only been partially excavated, but appears to be part of an additional room partially exposed in an adjoining trench.

The architectural evidence in this trench suggests an additional phase of occupation on the site's summit. The remains found in the SMT 9 northernmost room indicate abandonment. Additional mudbrick architecture built on top of stone walls in the trench, however, suggests that some spaces were reoccupied. South of F3, in the second room, the original space defined by the stone walls was cleared, filled, and sealed by a floor that accompanied this secondary phase. The next room to the south was likely occupied at the same time. Previous seasons of excavation at Çadır Höyük have yielded only very ephemeral evidence for Selçuk period occupation. Remains in SMT 3, however, suggest a significant architectural component on at least one portion of the summit.

### Southern Summit: Trench USS 2

USS 2 was opened on the south edge of the summit, west of the large room discovered in 2012 in USS 3 (Steadman *et al.* 2013). The room in USS 3 was built prior to the construction of the Byzantine fortification wall, possibly as early as the 5th or 6th century CE. When the Byzantine fortification wall was constructed, it encompassed this USS 3 room, using its southern wall as part of the fortification. Architectural remains in USS 2 (Fig. 25) were similar to other summit trenches along the large wall. Below topsoil, we quickly uncovered F1 and F2, walls built with fieldstone and fragments of a very thick roof tile. Feature 2 abuts F4 (the western wall of the large room in USS 3) slightly offset from the northern corner. In a previous season, in trench SMT 18 to the northeast, we excavated a stone wall (F6 in SMT 18) connected to the USS 2 F2/F4 corner. Previous excavations in SMT 18 showed that builders of





Fig. 26. Objects from trench USS 2. Top left: reliquary cross from L5; top right: metal cross from L19; middle: lead sealing from L19; bottom left: part of metal helmet from room; bottom right: metal arrow head from room.

way to the fortification wall. South of the edge of F10 we excavated L19, a deposit of silty soil that extended over the top of the fortification wall. In this locus we found a second cross, a coin, and a lead sealing. Also from this area a metal arrowhead and the top of a metal helmet were recovered (Fig. 26). The seal is a particularly significant find, as it provides an identification for the Charsianon, the Byzantine theme in which we have long believed the site to be located. The seal of Petros Chrysoberges dates to the middle of the 11<sup>th</sup> century and has an exact parallel in the Hermitage Museum (Lichačev 1991).

Feature 9 is a second wall running north-south from F2 and abutting F28. West of F9, in a room defined by F1, F9, F28, and F42, we excavated a large iron band, probably from a wooden barrel, resting on F34, a packed mud surface. The portion of the F28 fortification wall, encompassing the southern half of the trench, is very poorly preserved; the exterior face has almost completely fallen out due either to erosion or robbing. At the far western extent of USS 2 we can see the wall make a turn around the edge of the mound.

This combination of rooms aligned along the inside of the fortification wall parallels the other areas on the summit. Although the construction style is similar, the arrangement of space is far more irregular. The fortification wall was built around the mound, incorporating the already standing walls of the room in USS 3. Architecture in USS 2 was built later to in-

the Byzantine wall and interior storage building constructed a 5 cm thick plaster courtyard with a rectangular plaster basin near its southern boundary. In USS 2, a north-south return wall, F3, of similar construction demonstrates that there may be a room north of the F2 wall (this area is currently unexcavated). Just north of the F2 wall and next to the SMT 18 F6 wall, we encountered an irregularly shaped area of hard-packed mud (F7), below which was a deposit of loose soil (L13) that included many small rectangular clay tiles with traces of painted plaster on the edges. Similar debris was found in SMT 18 in 2012 when we excavated beneath the plastered surface; these may have been retrieved from deeper Late Antique levels when Byzantine builders dug into the mound to create foundations for the walls and level building surfaces.

South of the F2 wall we excavated topsoil/slope wash between F2 and the fortification wall (F28). In the fill (L5) we found a well-preserved bronze reliquary cross. Below L5, we exposed F10 (a packed mud surface cut by many pits) that does not reach all the

corporate already standing walls and may explain some of the irregularity here. The purpose of these rooms, like those ringing the interior of the defensive wall elsewhere on the mound summit, appears to be devoted more to storage than domestic activities; activities related to defense of the mound may have also been associated with this room.

### The Western Summit: Trenches SMW 1-2

The two new trenches opened on the western side of the summit in 2016, SMW 1-2 (Fig. 27), demonstrated the now expected rooms built against the interior of the Byzantine fortification wall. Trench SMW 1 encompasses a section of the fortification wall (F4) in the western half of the trench, including a small portion west of the wall (in the northwest corner of the trench) that currently remains largely unexcavated. East of the fortification wall are several features built of stone, which likely once supported mudbrick superstructures. A complete room was contained in the trench, bounded by walls F1, F2, and F6. Wall F1 is truncated to create a doorway into the room. Wall F5 demonstrates that to the north of F6 there is likely another room. Interestingly, wall F6 once abutted F5, but was partially deconstructed to create a passage between the two rooms at some point. It is unclear whether the more northerly room was added later, and thus a doorway was needed, or the two rooms were built simultaneously and entirely separated, and passage between them was later necessary.

Contained within this room was a compacted mud surface (F11) in which we found a pit (F14) around which were arrayed postholes. Just to the southwest was a mudbrick formation (F15, not shown on Fig. 27) that may have served to hold a substantial ceramic vessel. A number of items were obtained from pit F14, including wood charcoal that suggested the remains of a wooden box, or chest, along with metal pieces in the form of latches and hinges (Fig. 28), as well as some nails, and two pieces

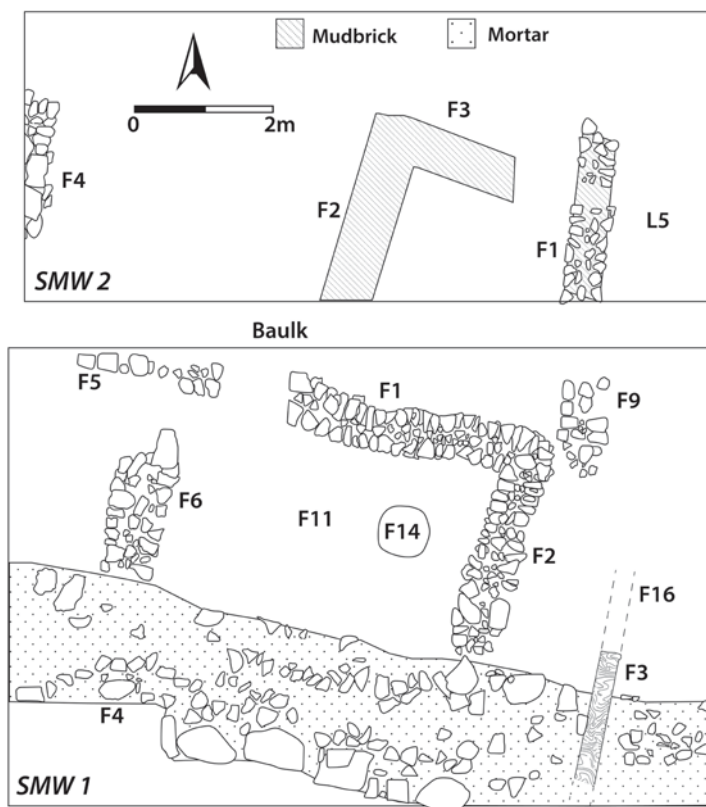


Fig. 27. Plan of trenches SMW 1-2 architecture and features discussed in text.

of a human mandible. Also within this room, on surface F11, were two crosses, an arrowhead, and part of a crushed metal pedestalled bowl (actually from L5 above F11) (Fig. 28) as well as a small piece of metal that appears to be chain mail. As was the case in USS 2, and SMT 3 (see previous reports, Steadman *et al.* 2015, Steadman and McMahon 2015), this room was not domestic in nature but apparently devoted to storage, and perhaps more specifically to duties associated with the defensive wall.

Running along the southern edge of SMW 1 is a complex of features including F3, F9, and F16, all part of a drainage system that allows rain runoff to flow from the Byzantine occupation on the summit, past the room just described, and through the F4 Byzantine fortification wall. The stone feature F9 is built alongside the drain itself and may have been a stabilizing structure (it corresponds to F1 in SMW 2, only the top of which is currently exposed). The F3 portion of the drainage is a concave plastered channel, 30 cm in width, running through the fortification wall; the F16 surface consists of hard packed mud and plaster, which may be a surface but is likely part of the drainage system. Two postholes in this area may have supported some type of temporary roof to shelter people from the sun. A number of objects were found in and around the drainage area, including multiple grinding stones, a variety of metal objects including a candle holder, a loom weight, and a hammerstone, all suggesting that a number of activities may have been carried out using the water running through the channel. We plan to further explore the drain in 2017.

The SMW 2 trench was opened to the east of SMW 1 in an attempt to further understand the Byzantine architectural patterns of the west summit. Given time and resource limitations, SMT 2 was opened only to the 5 × 10 m extent; it will be expanded in 2017. Four architectural features were identified in 2016, F1 and F2 extending from the western baulk, the latter joining with F3 in the center. Wall F4, along the northern baulk, may join with F5 in SMW 1, but further excavation is necessary to establish such a connection. Walls F2 and F3 were built (so far, only the tops are exposed) entirely of mudbrick and may have been “add-ons” to the already existing stone architecture. The area between F4 and F2 was full of stone tumble, as well as decayed mudbrick, perhaps from the F4 and F5 (SMW 1) walls, post-habitation. The area south of F1, which should overlie the drain (noted as L5 on Fig. 28), offered a variety of artifacts and ecofacts including human and animal bone, and metal tools. At present we cannot associate the presence of human bone inside the SMW 1 room and near the SMW 2 room with either the drainage system, or defense of the mound. Perhaps further exploration of the area in 2017 will help clarify the reason for the fragments of human remains scattered in the area.



Fig. 28. Objects from trench SMW 1. Top row: metal remains of lock, latches, possible handle; middle right: metal bowl; bottom left: cross; bottom right: arrowhead.

We are only at the beginning of phasing the architecture in the SMW trenches, and only the tops of the walls in SMW 2 have so far been exposed. A coin, dating to the 11th century, found in the fill inside F4 in SMW 2, offers some notion of a terminus post quem for the building of this wall. As is generally the case for all the rooms ringing the 9<sup>th</sup>-10<sup>th</sup> century CE Byzantine fortification wall, the SMW 1 rooms were likely built after the construction of the more massive wall, but perhaps only by days or weeks. The interior architecture, represented by areas such as SMW 2, will take more excavation and investigation to determine phasing vis-à-vis the architecture closely associated with the fortification wall.

### Summary of the Byzantine excavations

Çadır Höyük has offered an enormous amount of new data on the Byzantine occupation in this region of the Anatolian plateau; this is due to our consistent exploration of these remains which cover the mound summit and the North Terrace. Circumstances beyond our control prevented further work on the terrace beginning in 2016, and so we refocused our work on the summit, opening the new trenches and revisiting already open trenches, described above. This strategy has proven extremely important, providing confirmation of the architectural footprint inside the fortification wall, and opening the door to an even longer occupation at the site than previously considered, i.e., into the early Selçuk periods on the plateau. We plan to return to these operations in 2017 to further explore these and other questions that remain regarding the extensive first and early second millennium CE occupation at this rural, but increasingly important, Byzantine settlement.

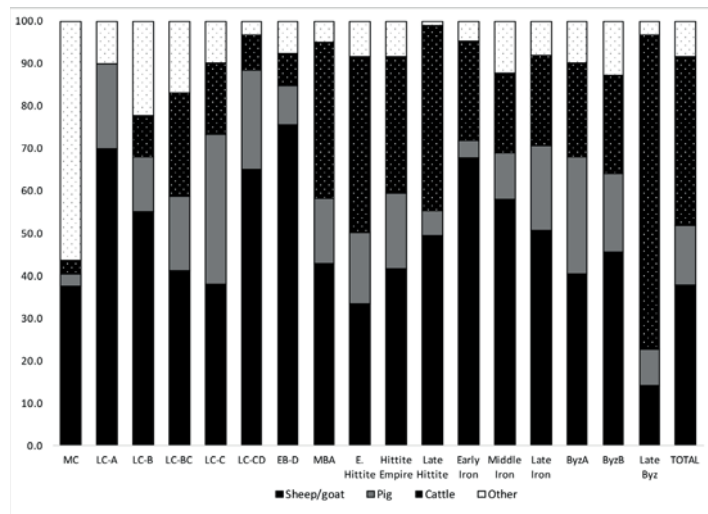


Table 2. Abundance of major mammalian taxa. MC=Middle Chalcolithic (4500 BCE); Agglutinated Subphase 1 (=LC-A on table), ca. 3700 BCE; Burnt House/Omphalos House Phases (=LC-B on table), ca. 3500 BCE; Burnt House/Omphalos House Phases (=LC-BC on table) ca. 3300 BCE; Burnt House/Omphalos House Phases (=LC-C on table), ca. 3200 BCE; Apsidal/Early Bronze Age (=EB-D on table) 3000/2900 BCE; MBA=Middle Bronze Age (ca. 2000 BCE); E. Hittite=Early Hittite (ca. 1600 BCE); Hittite Empire (ca. 1400 BCE); Late Hittite (ca.1200 BCE); Early Iron (ca. 1000 BCE); Middle Iron (ca. 800 BCE), Late Iron (ca. 700 BCE); ByzA=Byzantine (NT trenches); ByzB=Byzantine (NTN trenches); Late Byz=Byzantine on summit (ca. 1000 CE, Summit Trenches).

## THE ARCHAEOFAUNAL ASSEMBLAGE

Ongoing faunal work at Çadır Höyük is focused on reconstructing the use of animals at the site relating to ritual, economy, politics, and environment, with an emphasis on identifying change over time through the long stratigraphic sequence (Arbuckle 2009). By examining patterns in species frequencies, demographics, biometrics, fragmentation, butchery, and taphonomy in the faunal assemblages, our goal is to contribute not only to the history of animal use in central Anatolia but also to understand the archaeology of the site more generally.

In this report, we describe for the first time taxonomic abundance data generated from the entire span of the stratigraphic sequence ranging from the Middle Chalcolithic to the late Byzantine period. In addition, we also examine the nature of fragmentation of the faunal assemblages which is related both to changes in carcass processing practices through time, but also to the nature of depositional environments in which the assemblages were produced.

**Species frequencies**

Faunal work at Çadır has resulted in the recording of more than 25,000 specimens in the project zooarchaeological database from all trenches and representing every phase of occupation of the settlement. A preliminary summary of the Number of Identified Specimens (NISP), primarily representing mammalian remains, is presented in Tables 2 and 3 based on specimens assigned to loci and features that have been assigned to specific stratigraphic and chronological phases.

These data show that, overall, thirty taxa have been identified to the family, genus, or species level in the Çadır faunal assemblage. Overall, the total faunal assemblage is dominated by four domestic taxa including sheep (*Ovis aries*), goat (*Capra hircus*), pig (*Sus scrofa*), and cattle (*Bos taurus* and also likely *Bos indicus*), with smaller numbers of domestic equids (including horse [*Equus caballus*] and donkey [*Equus asinus*]) and dogs (*Canis familiaris*). Among wild taxa fox (*Vulpes*) and hare (*Lepus*) are most abundant, followed by several species of mustelid, rodents, and small numbers of deer. Wild equids including horse (*Equus ferus*) and hemionus (*Equus hemionus*) may also be present, as are tortoise and birds (including both wild birds and domestic fowl).

Trends in species frequencies over time show significant changes in the animal economy at Çadır through the long occupational sequence (Tables 2 and 3). Although the Middle Chalcolithic (fifth millennium BCE, primarily from the site's Deep Sounding) faunal assemblage is highly diverse, with larger than average numbers of wild taxa (similar to the situation at both Chalcolithic Orman Fidanlığı and Kanlıtaş [Siddiq 2016; Uerpmann 2001]) among domestic mammals sheep and goats dominate. This pattern is also evident through the Late Chalcolithic (fourth millennium BCE) phases, where sheep and goat are the most abundant taxa, followed by fluctuating numbers of pig and cattle. In the Early Bronze Age transitional phase (Early Bronze Age, 2900 BCE), sheep and goats rise to their highest levels (76% of the mammalian fauna), perhaps reflecting a shift to a more mobile pastoral economy. In the Middle and Late Bronze Age phases, caprines decrease with a concomitant increase in the abundance of cattle which becomes the most abundant taxon (41%) in the Early Hittite period. This cattle-centered economy perhaps reflects an increase in the status and wealth of the settlement within the Hittite polity, the role of centralized provisioning of the settlement, and/or a sign of intensification in local agricultural production through the use of oxen, and has parallels at other Bronze Age sites on the Anatolian plateau (Arbuckle 2014).



	MC	LC-A	LC-B	LC-BC	LC-C	LC-CD	EB-D	MBA	Early Hitt.	Hitt. Emp.	Late Hitt.	Early Iron	Mid. Iron	Late Iron	Byz A	Byz B	Late Byz.	TOTAL
unidentified	0	0	0	0	0	0	0	197	416	1013	237	881	47	31	122	30	4	2978
very small	0	0	16	29	0	1	3	0	3	6	0	3	4	23	13	3	0	104
small mammal	3	0	4	13	2	2	0	2	9	24	42	13	10	3	37	23	0	187
med. mammal	3	18	161	706	60	123	76	128	185	1146	146	628	580	180	674	567	103	5484
large mammal	0	4	116	94	15	14	10	86	202	662	62	241	151	29	395	253	308	2642
med. artiodactyl	2	0	8	12	23	4	1	0	1	14	1	9	26	10	25	15	14	165
large artiodactyl	0	0	5	6	3	0	1	3	26	39	7	17	15	6	5	1	77	211
<i>Ovis/Capra</i>	6	7	87	77	16	34	36	22	44	234	23	211	268	94	242	161	224	1786
<i>Ovis</i>	0	0	44	7	4	5	1	2	8	31	1	15	54	11	25	38	43	289
<i>Capra</i>	0	0	27	13	5	0	2	6	2	20	3	12	61	17	20	17	26	231
med bovid/cervid	6	0	7	1	2	0	1	4	5	43	14	34	11	1	7	7	4	147
<i>Bos</i> sp.	1	0	24	52	9	5	3	26	47	212	29	77	112	45	155	111	1458	2366
<i>Bos indicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
<i>Capreolus</i>	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	0	3
<i>Dama</i>	0	0	1	2	0	0	0	0	0	1	0	0	2	0	1	0	0	7
<i>Cervus</i>	0	0	2	0	0	0	0	0	0	2	0	1	6	0	0	0	0	11
<i>Sus</i>	1	2	39	41	25	14	5	12	30	141	5	17	75	48	199	91	175	920
<i>Camelus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
small/med. equid	0	0	0	0	0	0	0	0	3	4	0	5	12	1	7	13	2	47
large equid	1	0	2	1	1	0	0	0	0	1	0	1	30	2	7	4	5	55
<i>Equus</i> sp.	1	0	2	1	0	0	0	0	0	4	0	0	14	5	5	8	8	48
small carnivore	0	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	6
med carnivore	1	0	2	6	0	5	0	0	1	2	0	0	0	1	0	0	0	18
<i>Felis</i>	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
large mustelid	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
<i>Martes foina</i>	0	0	0	0	0	0	0	0	0	0	0	0	31	0	0	0	0	31
<i>Mustela nivalis</i>	0	0	0	1	0	0	0	0	0	0	0	1	2	1	0	1	0	6
<i>Meles</i>	0	11	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	12
<i>Canis</i> sp.	0	0	39	22	2	2	0	2	5	43	0	6	10	5	8	21	4	169
<i>Vulpes</i>	5	0	1	5	0	0	0	0	4	3	0	2	5	0	0	64	6	95
Erinaceinae	3	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	1	9
Rodentia	0	0	0	0	0	0	0	1	16	4	0	11	0	5	1	0	12	50
<i>Rattus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
<i>Sciurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
<i>Spalax</i>	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2
<i>Lepus</i>	16	0	18	6	1	0	1	2	3	5	0	2	4	2	4	1	9	74
reptilia	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
<i>Testudo</i>	1	4	21	1	9	0	2	1	3	1	0	1	46	8	0	0	2	100
snake	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
amphibian	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
fish	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	4
bird	0	1	2	8	3	0	2	0	4	7	1	4	4	5	39	16	42	138
<b>TOTAL</b>	<b>51</b>	<b>48</b>	<b>637</b>	<b>1110</b>	<b>181</b>	<b>210</b>	<b>145</b>	<b>494</b>	<b>1019</b>	<b>3662</b>	<b>571</b>	<b>2192</b>	<b>1583</b>	<b>537</b>	<b>1999</b>	<b>1448</b>	<b>2528</b>	<b>18415</b>

Table 3. Taxonomic identifications at Çadır Höyük based on Number of Identified Specimens (NISIP). MC=Middle Chalcolithic (4500 BC); Agglutinated Subphase 1 (=LC-A on table), ca. 3700 BCE; Burnt House/Omphalos House Phases (= LC-B on table), ca. 3500 BCE; Burnt House/Omphalos House Phases (=LC-BC on table) ca. 3300 BCE; Burnt House/Omphalos House Phases (=LC-C on table), ca. 3200 BCE; Apsidal/Early Bronze Age (=EB-D on table) 3000/2900 BCE; MBA=Middle Bronze Age (ca. 2000 BCE); Early Hittite (ca. 1600 BCE); Hittite Empire (ca. 1400 BCE); Late Hittite (ca. 1200 BCE); Early Iron (ca. 1000 BCE); Middle Iron (ca. 800 BCE), Late Iron (ca. 700 BCE); ByzA=Byzantine (NT trenches); ByzB=Byzantine (NTN trenches); Late Byzantine (ca. 1000 CE, Summit Trenches).

This emphasis on bovines declines rapidly with the onset of the Iron Age (recorded in trench USS 4), where cattle decrease in importance and sheep and goat reemerge as the dominant component of the animal economy of the first millennium BCE. In addition pigs increase through the Iron Age sequence, suggesting an emphasis on household level production. Equids, including both horse and donkey, are also notably abundant in the Middle Iron Age deposits. Finally, NISP data show that the Byzantine economy (sampled from both the NT and NTN trenches) was characterized by a mixed economy including sheep and goats (41-46%), pigs (19-27%), and cattle (22%), with the addition of domestic fowl and smaller numbers of equids. This mixed animal economy differs from many Byzantine faunal assemblages in the Levant where sheep and goat dominate (ca. 65%) and pigs are poorly represented (ca. 6%) (based on Perry-Gal *et al.* 2015), and differs from the economy documented at Byzantine Sagalassos in southwest Turkey where cattle dominate (Vionis *et al.* 2010). These new data from Çadır appear to define a distinctive rural central Anatolian Byzantine animal economy. The appearance of the remains of camel (*Camelus* sp.) as well as zebu cattle (*Bos indicus*) suggest that Byzantine Çadır was connected to active trade routes linking the Central Anatolian plateau to a much wider world.

The late Byzantine faunal assemblage from the Summit contexts shows a very different pattern from that in other Byzantine contexts. Here the assemblage is overwhelmingly dominated by the remains of cattle (74% of NISP), many of which represent complete and articulated elements, with some located within structures on the top of the mound. Rather than reflecting a change in the animal economy, this assemblage instead appears to reflect a unique in situ deposit characterized by the catastrophic kill-off of a large number of animals, perhaps all of the livestock present at the settlement, and associated with the abandonment of the Byzantine settlement in the eleventh century CE.

### Fragmentation

We quantified degree of fragmentation in the Çadır faunal assemblages with the goal of monitoring evidence for changes in carcass processing and taphonomic variables through time. In order to address fragmentation, specimens were recorded in regards to their completeness on a scale from 0-25%, 25-50%, 50-75%, 75-99%, and 100% complete; these data are presented separately for medium and large mammal remains in Tables 4-5.

Specimen completeness data show that for both medium and large mammals the vast majority of specimens are highly fragmented (<25% complete) in all pre-Byzantine periods, reflecting intensive and intentional processing of bones for within bone nutrients including marrow and grease. In general, large mammals (primarily cattle) are more highly fragmented than medium mammals (sheep, goat, and pigs). These patterns are similar to levels of fragmentation reported for cattle, caprines, and pigs at Late Neolithic Domuztepe (Kansa *et al.* 2009). Fragmentation of both medium and large mammals is particularly high in the Late Chalcolithic Burnt House subphase II and the transitional Late Chalcolithic Apsidal Phase and Early Bronze Age, as well as the Hittite and Early Iron assemblages. A notable decrease in fragmentation is evident in the Middle and Late Iron Age levels, especially for medium mammals, which may reflect changes in the use of the USS 4 trench for increasingly industrial purposes over time and therefore reflect behaviors not directly associated with alimentation. Changes in the abundance of taxa from this trench in the Middle Iron Age, including larger than average numbers of equids, pigs, mustelids, and fox, and worked bone and antler supports the interpretation that this area represents increasingly non-subsistence related tasks.

The most significant changes in fragmentation are evident in the Byzantine deposits. Here fragmentation levels are much lower in deposits from the North Terrace trenches, with 50% of medium mammal specimens recorded as 75-100% complete in contrast to all earlier levels where <30% of specimens are this complete. These data likely reflect major changes in carcass processing techniques, particularly a decline in processing bones for within bone nutrients. This may be explained by the prevalence of other sources of oils and fats, including those from olive and linseed oils, increased use of dairy products, and eggs of domestic fowl, which may have made the extraction of bone grease unnecessary and may also be associated with a culinary shift towards roasting meat rather than stewing (Vionis *et al.* 2010). Finally, fragmentation data show that the Summit contexts (Late Byzantine) exhibit the lowest fragmentation rates at the entire site. Here, a remarkable 70% of the medium mammal remains and 77% of large mammal remains are 75-100% complete. This lack of evidence for fragmentation along with a lack of evidence for butchery marks strongly suggest that the Summit faunal assemblage was not the result of the accumulation of consumption debris but instead reflects a unique catastrophic death event confined within the walls of the structures on the Summit of the mound. This unique “death assemblage” will be the focus of more detailed analysis since it represents a rare snapshot of a living Byzantine livestock system.

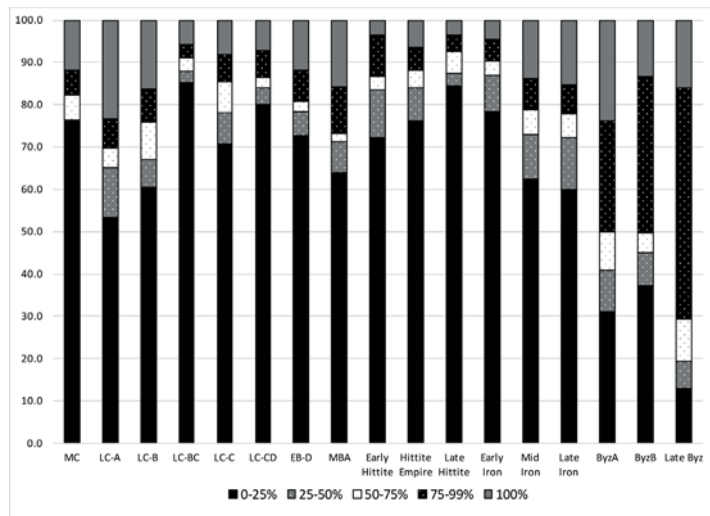


Table 4. Degree of fragmentation of medium mammal remains in the Çadır assemblages. Categories include 0-25%, 25-50%, 50-75%, 75-99% and 100% complete.

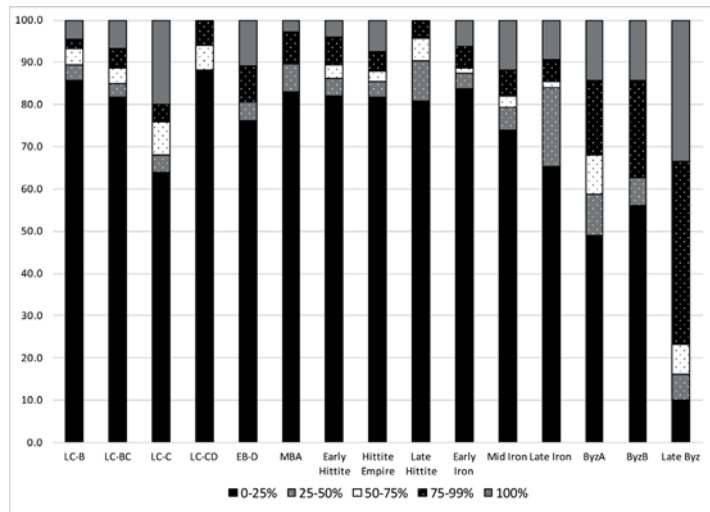


Table 5. Degree of fragmentation of large mammal remains in the Çadır assemblages. Categories include 0-25%, 25-50%, 50-75%, 75-99% and 100% complete.

## CONCLUSION

As we prepare for the 2017 season we find that the review presented here highlights many avenues for future research at Çadır Höyük that will serve to answer questions spanning five thousand years of occupation on the site. We plan to continue excavations in all the periods reviewed here, as well as others reported on elsewhere. We are grateful for the opportunity to make such a thorough report on our work over the previous two seasons, and we hope to continue to provide results in this venue in the future.

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